Synopsis

Equity market in India – the performance and potential of Domestic Institutional Investment

Submitted by

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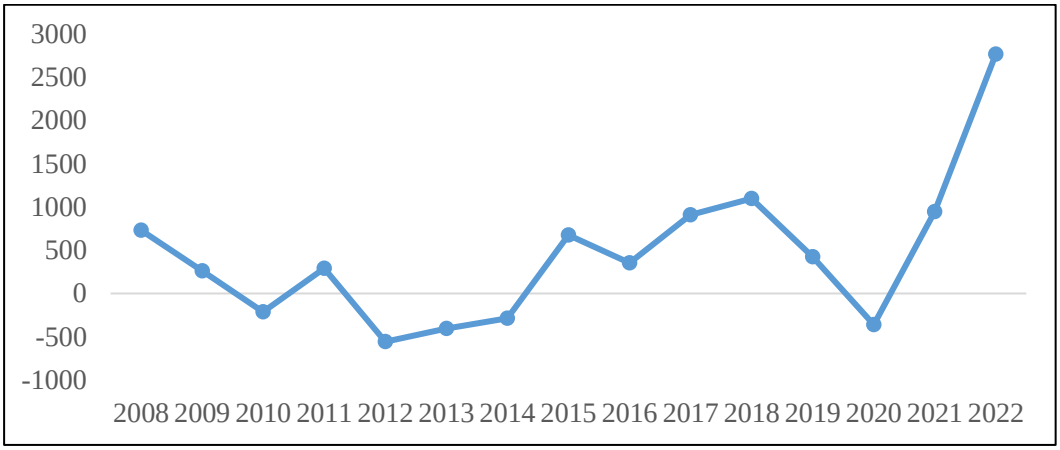
1. Introduction

The world witnessed an enormous increase in the activities and importance of institutional investors since early eighties. This trend could be attributed to the rapidly growing equity markets of the countries and the shift of household preferences from direct stock ownership to holdings via asset managers. Over time this resulted in institutional investors becoming large owners of publicly listed companies in these countries (Fichtner, 2020). India too has been no exception, though institutional investment activities in the economy have a relatively shorter history. Prior to economic reforms in 1991, the few institutions which operated in the Indian markets were mostly government owned. It was only after the economic reforms in the nineties and conducive government policies thereafter that the economy witnessed significant growth in institutional investment (Sen K., et.al, 2014). However, since the beginning of this growth of institutional investors, Indian equity market has been characterized by an outsized participation of foreign institutional investors. But, over the past few years, there has been a change in this trend as domestic intuitional investors have shown a significant rise in participation as given in figure 1.1. Rising domestic participation is likely to benefit financial markets in terms of enhanced efficiency, liquidity and stability while simultaneously driving economic growth, promoting wealth distribution and increasing economic resilience. Thus, importance of increasing participation of domestic investors for a fast-growing country like India can hardly be overstated.

Figure 1.1: DII flows (in INR billions) 2008 - 2022



Source: Bombay Stock Exchange

1.1 Background

At the time of liberalization in 1991, the size of foreign institutional investments (FII) in equity markets was INR 26 billion. It rose to INR 142 billion in 2000 and by 2010 stood at INR 3079 billion (Securities and Exchange Board of India (SEBI))[1]. Consequently, the net flows of FIIs have had a dominating effect on the equity market performance of the country in terms of returns and volatility. But the previous decade witnessed a marked increase in participation of Domestic Institutional Investors (DIIs) in the Indian stock market with DII flows surging from INR -106 billion in 2010 to INR 946 billion in 2021 (Bombay Stock Exchange (BSE))[2]. The rise in participation was particularly sharp since 2015. On the contrary, net FII equity flows that amounted to INR 1333 billion in 2010 declined sharply to INR -506 billion in 2021. The FII flows since 2015 remain subdued partly due to withdrawal of quantitative easing by US Fed and partly due to slowing down of economic growth in India.

[1] https://www.sebi.gov.in/sebiweb/other/mutualfunds.jsp

[2] https://www.bseindia.com/markets/equity/EQReports/StockPrcHistori.html?flag=1

The last two years of the said period also saw the unfolding of the global pandemic which resulted in a massive decline in the India's growth rate as measured by growth in its Gross Domestic Product (GDP) (6.1 per cent in 2018 which fell to 4.2 per cent in 2020 and further to -7.3 per cent in 2021). Despite the declining GDP growth rate and subdued FII flows, equity markets in India (Nifty Index[3]) surged by approximately 100 per cent from 2015 to 2021 in INR terms (figure 1.2) and 51 per cent (MSCI India[4]) in dollar terms. MSCI India outperformed MSCI Emerging Market index[5] by 23 per cent during the same period (based on data from Bloomberg[6])

This rise in domestic participation through institutions is a result of heightened retail participation. Retail investors increased their investments in Equity Mutual Funds (MF) through Systematic Investment Plans (SIP), which surged from INR 20 billion in 2015 to INR 104 billion in 2021 (Association of Mutual Funds in India (AMFI)[7]), shifting funds from other asset classes such as bank deposits, real estate, and gold. Consequently, MF which account for more than 60 per cent of DII flows recorded an impressive growth during the period (2015-2021) with total assets under management (AUM) of mutual funds increasing from INR 10.8 trillion (approximately 8 per cent of nominal GDP) in 2015 to INR 36.7 trillion (approximately 16 per cent of GDP) in 2021 (Investment Company Institute (ICI))[8]. The steepest increase in assets under management

[3] The NIFTY 50 is an Indian stock market index comprising the float-weighted averages of 50 major companies listed on the National Stock Exchange (NSE). The index was introduced on April 22, 1996, with its base date set as November 3, 1995

[4] The MSCI India Index measures the performance of the large and mid-cap segments of the Indian market. https://www.msci.com/documents/10199/1ad792ce-3199-445c-8be3-f2a035ac782d

[5] The MSCI Emerging Markets Index captures large and mid-cap representation across 24 Emerging Markets (EM) countries which include Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Kuwait, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates. https://www.msci.com/documents/10199/c0db0a48-01f2-4ba9-ad01-226fd5678111

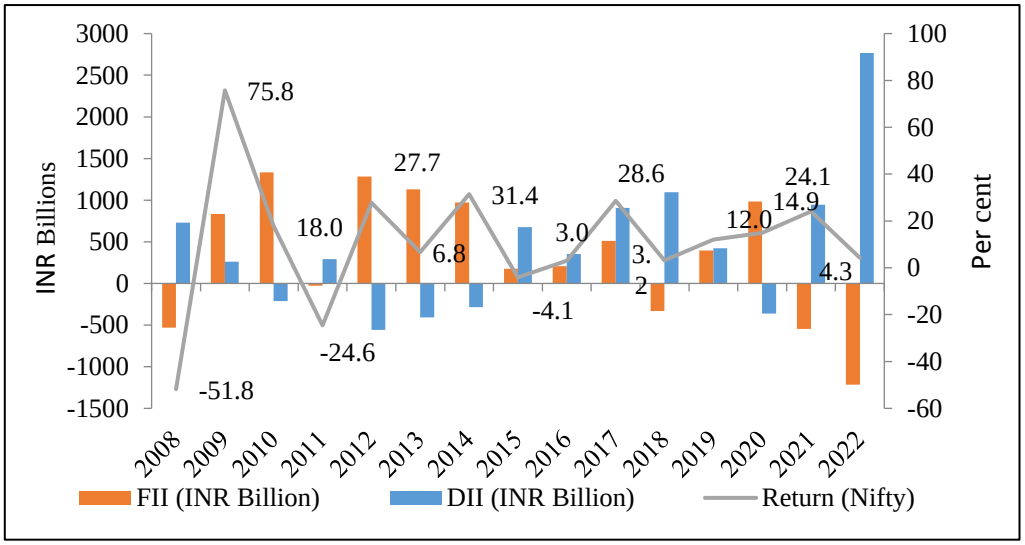
[6] https://www.bloomberg.com/asia

[7] https://www.amfiindia.com/

[8] https://www.ici.org/research

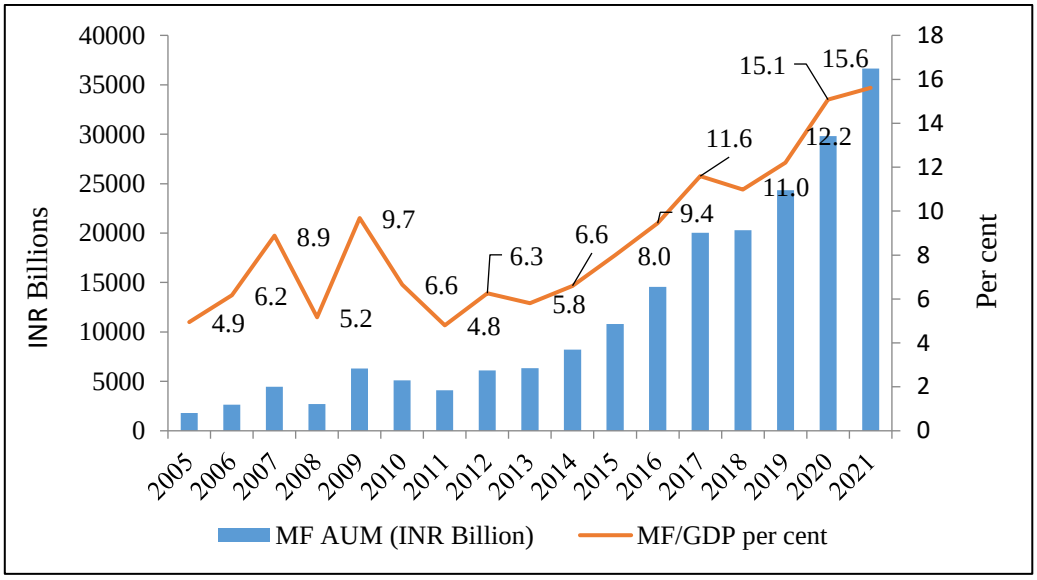
(AUM) for MFs occurred between 2016 when it was INR 14.6 trillion, and 2017, when it reached INR 20.0 trillion (figure 1.3). The gross buy and sales figures of MF as depicted in figure 1.4 indicate substantially lower participation of DII prior to 2014, with INR 690 billion worth of mutual funds being redeemed during the four years from 2009 to 2013.

Figure 1.2: Returns (per cent) and FII and DII flows (in INR billions)



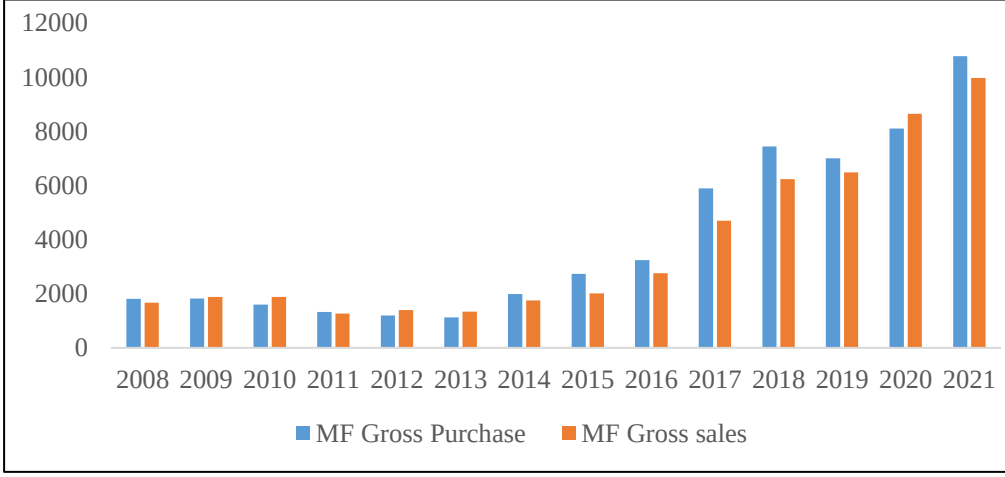
Source: Based on data from Bombay Stock Exchange (BSE), SEBI, National Stock Exchange (NSE)

Figure 1.3: Mutual Funds AUM in India (in INR billions) and MF GDP share (per cent)



Source: MF AUM based on data from Investment Company Institute (ICI), GDP data from World Bank indicators; Exchange rate (USD/INR) conversion from World bank indicators

Figure 1.4: Annual investment from Mutual Funds (in INR billions)



Source: Based on data from Security & Exchange Board of India (SEBI)

The period of increased DII participation coincided with the time after the new government took office in 2014, likely driven by rising expectations of policy reforms. The government did introduce a number of reforms, like faster clearance of projects by streamlining environmental norms, diesel deregulation, direct benefit transfer for LPG, coal and mining bills to increase economic activity, liberalization of foreign direct investment norms in sectors like insurance, railways, infrastructure, construction and defense, reduction of number of permits required to start a new business, introduction of online clearances and single window clearance portal 'e-biz' which integrated eleven central government licenses, introduction of goods and service tax. These policy interventions could have created a positive sentiment while the 2016 demonetization may have accelerated the increase in the number of folios and demat accounts, indicating a shift in portfolio allocation among retail investors. Between 2011 and 2016, the number of demat accounts increased from 19 million to 25 million. In the following six years, this number surged to 114 million by 2022.

1.2 Motivation for the Study

The Indian equity market has historically been dominated by the participation of foreign institution investors (FII). However, FII flows are typically volatile, as they respond sharply to both adverse domestic events and unfavourable external developments. Consequently, FII dominance has often led to destabilizing impacts on the Indian markets due to fluctuating net flows. Literature (Joo and Mir, 2014; Dhingra et al., 2016) provides empirical evidence of such destabilizing effects. Table 1.1 shows that FII net outflows from the country have historically coincided with negative returns on the Nifty Index (in 2008 and 2011). However, in more recent years (2018, 2021, 2022), similar outflows were not accompanied by negative returns.

The growing participation of domestic institutional investors (DII) has sparked debates and discussions about alternative sources of funds for the equity market. The discussions gained momentum in the past few years (2015–2022), when strong DII participation coincided with robust equity market performance in terms of both returns and volatility, despite declining FII flows (figure 1.2 and figure 1.5). During this period, the markets reported higher returns and lower volatility compared to the years before 2015, as well as relative to the Chicago Board Options Exchange's Volatility Index (CBOE VIX), a popular measure of the stock market's expected volatility based on Standard and Poor's (figure 1.6)[9].

Though the rising DII participation in the country may have fueled the ongoing debate about DIIs' ability to cushion markets during periods of subdued FII flows, yet the rate of DII participation in India remains significantly low by global standards (figure 1.7). The global average of AUM to GDP in mutual funds stands at 60 per cent while that in India is at 16 per cent indicating that there is a strong headroom for growth of mutual funds in the country in future.

Table 1.1: FII flows (in INR billion) and Nifty return (per cent)

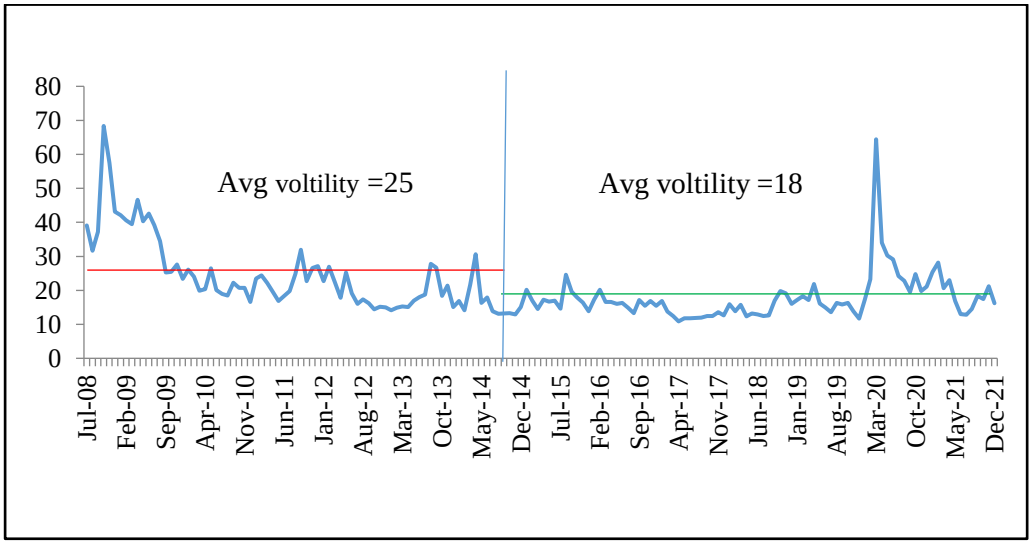
Year	FII	Nifty return
2002	36	3.3
2003	305	71.9
2004	390	10.7
2005	472	36.3
2006	365	39.8
2007	715	54.8
2008	-530	-51.8

[9] The S&P 500, or Standard and Poor's 500, is a stock market index that tracks the performance of 500 of the largest publicly traded companies in the United States.

2009	834	75.8
2010	1333	18.0
2011	-27	-24.6
2012	1284	27.7
2013	1131	6.8
2014	971	31.4
2015	178	-4.1
2016	206	3.0
2017	513	28.6
2018	-330	3.2
2019	394	12.0
2020	982	14.9
2021	-546	24.1
2022	-1214	4.3

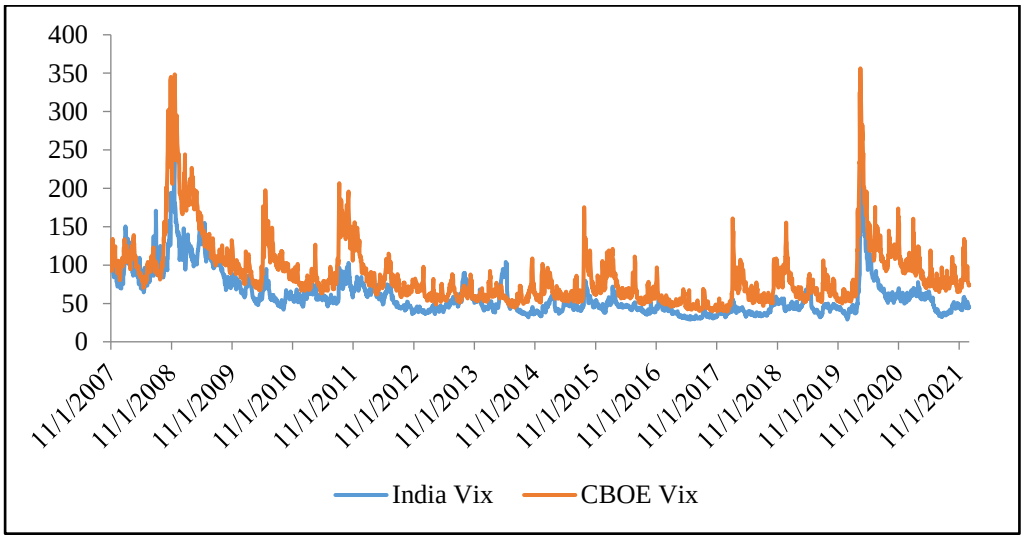
Source: Based on data from Central Depository Service (India) Ltd. (CDSL)

Figure 1.5: Indian volatility index (VIX) in per cent



Source: Based on data from National Stock Exchange (NSE)

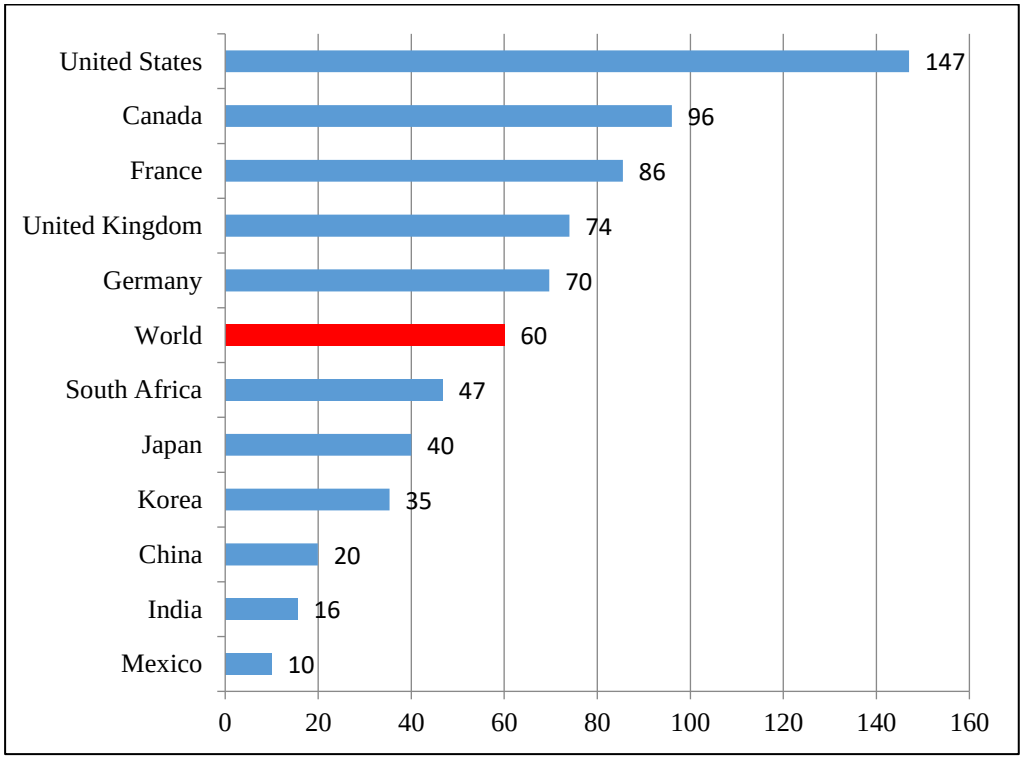
Figure 1.6: Indian VIX compared to CBOE VIX



Source: Based on daily data from Bloomberg

Note: India Vix series started from November 2007

Figure 1.7: AUM to GDP in mutual funds (per cent) in India vis-à-vis other countries (2021)



Source: Based on data from Investment company Institute (ICI) and World Bank indicators (WBI)

The growth of the mutual fund industry in different countries can be attributed to both macroeconomic and microeconomic factors. The macroeconomic factors include a country's level of economic development, demographic profile, literacy rates, internet penetration, real interest rates etc., while the microeconomic factors include strength of regulation, depth and liquidity of capital markets, returns in capital markets, distribution channels etc. Institutional factors such as strength of investor protection and conducive tax policies have also contributed to growth of mutual funds globally. The ongoing

discussion about the potential of DII participation in the Indian stock market requires an understanding of the drivers of growth and an investigation into the existing potential factors in India. Against this backdrop, it is important to first understand the dynamic relationship between investment flows from domestic institutional investors and stock market returns and volatility, while accounting for the historical dominance of FII in the Indian markets. Subsequently, the future growth prospects of DII need to be gauged, and pertinent policy directions need to be outlined. This is the guiding spirit behind this thesis.

1.3 Research Questions

Following research questions come from the motivation behind the study:

- What is the dynamic relation between domestic institutional investment flows and stock market returns and volatility in India?
- What are the growth drivers of the mutual fund industry (a major component of DIIs globally) across countries worldwide?
- Can the enhanced participation from DIIs in India help to stabilize equity markets in case of significant outflows from FIIs?
- What is the future potential of DIIs in India?

2. Literature Review

2.1 The state of play

The growing presence and participation of Domestic Institutional Investors in the global financial markets has led to a significant body of literature on the subject.

Literature on institutional investments identifies two main hypotheses that explain the relationship between the investment flow and stock market returns:

1. Positive Feedback Trading Hypothesis:

Feedback trading is an overarching term that encompasses a wide range of investment strategies driven by historical price movements. (Koutmos, 2014) and other aggregate trading data, such as volume and sentiment (e.g., Kurov, 2008; Chau et al., 2011). Feedback traders are categorized based on their reactions to historical trends as either positive or negative. Positive feedback traders follow the trend by buying after price increases and selling after price decreases, while negative feedback traders act in the opposite manner, selling after price rises and buying after price drops. Feedback trading is based on the belief that historical price movements exhibit identifiable and recurring patterns, which, if successfully identified, can help investors predict future price trends and generate profits. This trading practice is driven by both behavioural and non-behavioural factors. Behavioural considerations encompass factors such as anchoring, herding representativeness, conservatism, overconfidence, and reinforcement learning. In contrast, non-behavioural factors involve rational elements like speculation, agency concerns of institutional investors, informational aspects, and risk aversion (Economou et al., 2022).

Empirical findings suggest that domestic institutional investors often engage in feedback trading. While some evidence points to negative feedback trading—where fund managers sell assets that are rising in price and buy those that are falling—the primary strategy employed is momentum trading. In this approach, fund managers buy stocks that have been rising in price and sell those that have been declining, reflecting their tendency to capitalize on prevailing market trends. This momentum trading strategy, which aligns with positive feedback trading, appears to be influenced by non-behavioural factors, including agency concerns, risk aversion, informational payoffs, and style investing (Economou et al., 2022).

2. Base Broadening Hypothesis:

The base-broadening hypothesis posits that when the investor base expands, it leads to increased diversification. This diversification helps to lower systematic risk, which in turn reduces the required risk premium and the overall cost of capital, while potentially increasing expected returns (Errunza & Losq, 1985, 1989; Merton, 1987). The expansion of the investor base also lowers the perceived liquidity risk in the market (Allen & Gale, 1991;Hargis, 1995; Pagano, 1989) and leads to heightened information flow and price stability, Thus, the base-broadening hypothesis indicates a long-term cointegrating relationship between institutional investment flows and the overall level of stock prices, with causality flowing from investment flows to stock prices (Chhimwal and Bapat, 2020).

Similarly, two opposing theoretical perspectives on the relationship between institutional investors and stock market volatility are prevalent in literature (Garg and Bodla, 2011):

1. Destabilizing Forces Hypothesis: This theory argues that institutional investors increase stock market volatility.
2. Non-Destabilizing Hypothesis: This perspective claims that institutional investors do not have a significant impact on stock market

volatility.

The combination of the first two hypotheses in each case regarding the relationships between flow returns and flow volatility indicates that investors enter the market seeking benefits and later withdraw their funds, which contributes to increased stock market volatility. In contrast, the second hypotheses in both cases suggest that a greater number of Domestic Institutional Investors (DIIs) leads to a more complete market, improves information flow, and enhances investment choices. This increased transparency does not affect volatility and instead raises returns by lowering investment costs (Garg and Bodla, 2011).

These theories, which underscore the contradictory nature of the relationships between institutional investment flows, and both returns and volatility, have generated a substantial body of literature aimed at providing empirical evidence for the proposed hypotheses. While this area of research is significant and still expanding, there is a very smaller, though noteworthy, strand of literature dedicated to examining the determinants of growth of DIIs in various countries. This literature is focused primarily on mutual funds.

For the purposes of this thesis, the literature reviewed can be broadly classified into three categories: (i) studies examining Domestic Institutional Investor (DII) participation and its impact on equity market performance in the USA and other countries; (ii) studies on DII and its effects on equity market performance in India; and (iii) literature examining the factors influencing domestic fund participation globally.

2.2 Studies focusing on DII and its impact on equity market returns and volatility in the United States and other countries

Most of the prior studies pertaining to DII flows and their interaction with equity market returns and volatility are concentrated on developed stock markets, specifically, the United States of America (USA). Literature involving the USA stock market which was published mostly around the late nineties focuses on mutual funds. Important studies in this direction are those by Warther (1995), Remelona et al. (1997), Potter (1996), Fortune (1998), Edward and Zhang (1998), Mosebach and Najand (1999) and Edelen and Warner (2001).

Warther (1995) investigates the relationship between security market returns and aggregate mutual fund flows, focusing on the correlation between net inflows and security returns. The net flows are decomposed into expected and unexpected components for the period from January 1984–June 1993 on a monthly basis. The findings of the study reveal that unexpected inflows into mutual funds are strongly correlated with market returns, whereas expected cash flows show no such relationship. Furthermore, the analysis indicates that security market returns do not lead or lag mutual fund flows, thereby challenging the notion of feedback trading behavior among mutual funds. Remelona et al. (1997) uses an instrumental variable approach and confirms similar results by Warther (1995). By including the returns on other securities not held by the fund, along with the fund's own security returns, as determinants of unexpected flows, the study shows that unexpected equity fund flows were not influenced by either contemporaneous or lagged stock returns. This finding, based on data from July 1986 to April 1996 using both global and US indices, does not support the presence of feedback trading behaviour. Potter (1996) uses Granger causality test to examine the lead-lag relationship between returns and mutual fund flows and confirms similar results. In a study much later by Goertzman and Massa (2003), the interplay between index funds, asset prices, and market volatility are studied based on two years of daily data for three

prominent Standard and Poor's index funds. The findings reveal a significant contemporaneous correlation between fund inflows and returns. However, as in the earlier studies, this study too finds no evidence supporting positive feedback trading but did observe that negative market returns could lead to subsequent sales. While market volatility influences investor behavior through dynamic risk-sharing mechanisms, it does not deter investors from participating in the marketConversely, a number of studies on the US economy conducted around the same time does provide evidence of existence of feedback trading. , Fortune (1998) analyzes monthly data from January 1984 to December 1996 and uses an unrestricted vector autoregressive (VAR) model which is an improvement over the restricted VAR model used by Warther (1995). The findings from the study presents evidence supporting the existence of feedback trading, Another study around the same time by Edward and Zhang (1998) provide evidence of feedback trading based on using Granger causality test and an instrumental variable analysis. Conversely, Mosebach and Najand (1999) find a bi-directional relationship between the level of the stock market and flow of funds into the market by applying Engle and Granger error correction model on monthly data from January 1984 to July 1998 for S&P 500 index and net equity fund flow. Edelen and Warner (2001) confirm similar results for the US equity mutual funds based on high frequency daily data for the period February 1998 to June 1999. In a more recent study, Rakowski and Wang (2009) examines the time-series characteristics of daily mutual fund flows and the dynamic relationship between these flows and stock market returns. Based on a vector autoregression of flows and returns, the findings indicate that historical returns and specific fund attributes play a significant role in determining the daily flow levels. Thus, literature focused on the US economy yields mixed results.

Studies involving other regions can be further categorized region wise. A list of empirical research involving countries in East Asia is as follows. Oh and Parwada (2007) conducts an empirical research on Korean stock markets and mutual fund flows and reports a positive relationship between the market returns

and the flows. Based on vector autoregression model, mutual funds are found to be negative feedback traders. Cha (2018) also examines monthly Korean stock market data based on various empirical methods including VAR analyses, Granger causality tests and a variation of the present value model. The study finds that stock market returns Granger-cause equity mutual fund flows into the market, but not the other way around. Yangbo et al. (2010) investigates the relationship between aggregate equity mutual fund flows and excess stock market returns in Hong Kong and Singapore. The results of the study reveal existence of bidirectional causality between aggregate equity mutual fund flows and stock market returns in Hong Kong. In stark contrast, no such relationship is found in Singapore. This is despite the geographic proximity between the countries and their similar reputation as global hubs. In Singapore, neither aggregate equity mutual fund flows Granger-cause excess stock market returns nor do excess stock market returns Granger-cause equity mutual fund flows. Alexakis et al. (2013) inspects the relation the relationship between stock market movements and fund flow changes in Japan during 1998-2007. The research results based on crouching error correction model (CECM) reveals that stock prices and mutual fund units are cointegrated. In the case of positive movements, there is a bidirectional relationship. However, for negative movements, causality flows solely from fund flows to stock prices. Chiang et al. (2012) apply a threshold cointegration model to examine the trading behavior of foreign, domestic institutional and domestic individual investors in Taiwan. The analysis concludes that the purchases of domestic individual investors have a positive impact on stock prices when the market functions near equilibrium. However, when the market departs substantially from equilibrium, the purchases of foreign and domestic institutional investors led to a rise in stock prices. Qureshi et al. (2017) conducted an in-depth study focused on emerging markets in Asia, utilizing a panel vector autoregressive model to explore the dynamic relationship between mutual fund flows and stock market volatility. The findings of the study suggest that an increase in equity fund flows correlates

with heightened market volatility, while an increase in balanced fund flows tends to reduce market volatility. Moreover, equity funds are found to respond to market volatility in a manner consistent with positive feedback trading or momentum investing. Conversely, balanced funds demonstrates a tendency to move against market volatility, displaying contrarian or negative feedback trading behavior.

In a more recent study, Lobao and Levi (2016) examined the relationship between mutual fund movements and stock market returns in Portugal over the period from 2000 to 2012. The findings from a bivariate vector autoregressive (VAR) model indicate a statistically significant correlation between mutual fund flows and stock market returns. Similar results are obtained from a contemporary study involving another European country Poland which is conducted by Matuszewska-Janica et al. (2019). The study analyzed the short-term interactions between specific investment funds and the country's capital market, confirming that the relationship between investment funds and the stock market returns is bidirectional. A study on Turkey covering similar period from 2001 – 2011 by Humeyra and Filiz (2011) report the absence of short run causality between investment fund flows and stock market returns. However, the findings indicate the presence of a long-term relationship between the flows and the returns.

As in the case of the USA, literature involving other countries reports mixed results on institutional investment flows and stock market movements. This is despite similar research methodologies and analytical models used by the studies. These diverse findings could be attributed to the market structure and development, investor behavior and sentiment, economic conditions, regulatory differences, market liquidity, and other factors specific to these countries.

2.3 Studies focusing on DII and its impact on equity market returns & volatility in India

The increasing involvement of Domestic Institutional Investors (DIIs) in the Indian stock markets is a relatively recent trend. Consequently, the body of literature examining the relationship between DII activity and stock market returns and volatility in India is both limited and quite contemporary. The relatively small body of literature on this topic is listed as follows. Thenmozhi (2009) uses mutual fund as an indicator of DII participation and examines the dynamic interaction between mutual fund flows, returns and volatility for the period 2001-2008. The results using daily data for the period 2001-2008 and contemporaneous relationship suggest that a positive relationship exists between mutual fund flows and stock market returns and volatility. The analysis of the causal relationship between fund flows and market returns reveals that mutual fund outflows are significantly influenced by equity market returns. However, these returns are not affected by changes in fund flows, indicating negative feedback trading behavior in the Indian market. Additionally, a vector autoregressive model shows that a shock in fund flows leads to an increase in market volatility, which is positively correlated with previous fund flows, confirming that shocks in flows tend to amplify market volatility. Mishra (2011) examines the dynamics of the relationship between mutual funds investment flows and stock market returns in India for slightly longer and overlapping period from January 2000 to May 2010. Applying the Toda and Yamamoto approach to Granger causality tests the study finds unidirectional causality from the stock market returns to mutual fund flows. Salar and Shamim (2019) conduct a similar study based on data on DII and market returns but for a relatively later time period (2007 – 2016). However, this study too concludes that DIIs do not have any positive influence on market returns. However, market returns impact on investment pattern of DIIs in a big way. Kumar et al. (2020) explores the presence of any association between the stock market returns and

mutual fund assets under management in India. Based on quarterly data on asset under management of top twenty asset management companies in the country for a five-year period from 2009, the results of a multiple regression analysis suggests that there is no significant evidence of the presence of any such relationships in Indian markets.

Given the historical importance of the role of foreign institutional investments (FIIs) in Indian stock market, any discussion on institutional investment and its impact on Indian markets is unlikely to be complete and comprehensive without discussion of FIIs. Accordingly, a large part of literature on the topic on DIIs and stock market performance devoted to India, discuss FIIs while studying the role and impact of DIIs on the country's stock market. Most of the earlier studies provides evidence of higher influence of FIIs as compared to DIIs on equity markets. Murthy (2013) provides a comparative analysis of the three players, namely, FII, DII and mutual funds in the Indian stock. Using a set of Granger causality tests on monthly data from April 2007 to March 2010, the study concludes that both FII and DII actively influence the stock market, but FII is the dominant of the two. Mutual funds are found to be the passive players. Results from Naik and Padhi (2015) too confirms similar results for a period between 1st January 2002 to 31st July 2012. The findings from a vector auto-regression (VAR) model show that stock market is jointly influenced by both mutual funds' as well as FIIs' net equity investment. The causality test indicates a bidirectional causation between FII's net flow and market volatility; however, mutual funds flows do not cause volatility. Arora (2016) found that opposite trading patterns are followed by DIIs and FIIs using daily data from April 16, 2007, to 31 December 2013 and applying correlation, Granger causality test & VAR analysis. The study concluded that DIIs are negative feedback traders whereas FIIs are positive feedback traders. Gahlot (2018) provides evidence that activities of FIIs carry more influence on returns of Indian stock as compared to DIIs and buying and selling activities of FIIs influence the behavior of DIIs using daily data from April 1, 2011 to March 31, 2018 and applying

Granger causality tests. Parab and Reddy (2020) compare the nature of interactions between DII, FII and stock market returns across two equal time periods before and after demonetization (343 days) in India. The results suggest that prior to demonetarization there existed a negative relationship of FIIs and DIIs with equity market returns, however, in the post demonetization period this relationship became positive. Bansal (2020) concluded a strong relationship and impact of investment patterns of both FIIs and DIIs on volatility of Indian equity market.

Many of the studies on the topic identify factors, other than FII, that have impacted stock market performance of India. Index of industrial production (IIP) shows positive relation with stock market return (Garg, 2011). This indicates that increases in the growth rate of the economy is discounted positively by the stock market. Change in government yield represented by Government 10-year bond yields have also been considered as one of the independent variables in this study. Stock returns in India have also been led by major stock index returns in the United States, Japan, and other Asian markets, such as Hong Kong, South Korea, and Singapore (Pramita Mukherjee, 2008). Vardhan and Sinha (2016) examine the influence of FIIs on Indian stock market and its integration with US equity market. Using VAR models, the study concludes that US equity market returns have nil impact on FII inflows but had a minimal impact on outflows.

There has been limited research on Domestic Institutional Investors (DIIs) in India, with most studies emerging only in recent years. While nearly all these studies confirm the influence of stock market performance on DII flows, they fail to demonstrate any significant impact of DIIs and their mutual fund components on stock market performance. A few studies have noted a modest effect on volatility, as highlighted in the relatively limited literature on the flow-volatility relationship (Thenmozhi, 2009; Arora, 2016). In contrast, research involving Foreign Institutional Investor (FII) flows consistently shows their

dominant influence on returns and volatility in the Indian stock market. Nevertheless, all these studies underscore the passive role of DII and mutual fund flows. This may be due to the fact that increased participation of DIIs, primarily due to increased mutual fund investment is a relatively current phenomenon which has gained momentum only in the last five/six years. Most the empirical research on India listed in this section covers a period from early 2000 to a latest of 2018 and hence offers limited insight into the impact of DII on stock market performance. Also, systematic availability of time series data on other components of DIIs in India are rather missing and this poses a limitation in gathering data driven insight into DIIs impact on the stock market.

Given the recent improvement in the performance and penetration of DIIs, particularly mutual funds, examining the potential impact of these flows on the stock market in the near future is likely to yield valuable insights. This analysis could provide direction for researchers and policymakers. To assess the future potential of DIIs in India, this thesis dedicates a significant portion to analyzing the factors that may drive this potential. To support this analysis, the final section of the literature review focuses on examining the factors that have contributed to the growth of mutual funds in other countries around the world. The exclusive focus on mutual funds stems from the observation in Section 3.2 that most of the existing literature centers on this component of DIIs. The significant share of mutual funds within DIIs and the availability of long-term data on this component across various countries have naturally led to the substantial development of this strand of literature.

2.4 Factors impacting domestic funds participation globally

The introduction and eventual rapid growth of the mutual fund industry worldwide stimulated the creation of a significant body of literature on the subject. However, a large part of this literature has focused on issues that have been predominantly microeconomic in nature, such as fund performance, performance attribution, market timing abilities, fees, and fund flows. Research

on the macroeconomic aspects of the mutual fund industry, including its growth and development, has been relatively sparse. Most existing studies are focused on individual countries, with cross-country research being rare. Additionally, there are few studies that comprehensively identify the demand, supply, and regulatory factors within a single country. However, to accurately assess the future growth potential of mutual funds and the role of domestic institutional investors (DIIs), identifying these macroeconomic factors is crucial. Some of the recent and important multi country studies which can provide the basis for identifying the aggregate demand, supply and regulatory factors determining the growth of mutual fund industry in a country are those by Khorana et al. (2005); Klapper et al. (2004); Ramos (2009) and Plantier (2014). Khorana et al. (2005) studied the impact of national income, level of economic development, security market development, financial stability, regulatory effectiveness and returns on the size of mutual fund net assets. Using a dataset of 56 countries for the year 2001, the study conducts cross sectional analysis, based on univariate and multivariate regression to conclude that the most important factors leading to growth of mutual funds industries across countries are: a) strong legal and regulatory factors that help protect investors rights b) higher investor wealth and education c) well defined contribution plans d) increasing industry age and e) lower barriers to entry for new businesses. Klapper et al. (2004) conducts a similar study using cross section of 40 developed, developing and transition countries and for period of seven years from 1992-1998. The study conducts an econometric analysis to arrive at the main determinants of the world-wide growth of the fund industry. A large part of the study is also devoted to describing the country level drivers of mutual fund growth in the different countries included in their dataset. Based on fixed effect and random effect estimations the study confirms that capital market development and orientation of financial system are the most important factors of the growth of mutual fund industries Restriction on remuneration of retail deposits (interest rates) is also identified as an important factor contributing to the growth of the industry. The

study further finds that trade openness has been a major determinant in case of high-income countries, while per capita income and banking system development have been more effective in contributing to the growth of the fund industry in the middle-income countries. The study also finds that growth of equity funds in many European countries was behind that of USA, UK, Canada, Australia and South Africa because of high operating costs of mutual funds and lower development of equity markets. The bond funds experienced a consistent growth in these countries backed by government incentives towards investments in mutual funds. In case of South Africa, well developed contractual savings resulted in growth of mutual funds whereas tax financed universal pensions benefitted Australia and New Zealand. Ramos (2009) analyses the mutual fund industry for 20 countries using a database of more than 50,000 mutual funds. The results emphasize the role of contestability and competition in industry development. Lower barriers to entry are identified as important for the growth of the industry and for efficiency in terms of returns and fees. Plantier (2014) studies the strong growth of mutual fund industry in each of four broad regions: the United States, Europe, Asia-Pacific, and the rest of the world. The analysis highlights enabling factors consistent with those identified in previous studies. Strong regulation, diverse product offerings, improved access to capital markets, favorable returns, economic development, demographics, fiscal balance, and the presence of a defined contribution plan system are listed down as important drivers of the mutual fund industry growth. Additionally, this research examines the potential for growth in mutual fund assets based on data of 42 countries (outside USA and Europe) in 2012 available at the International Investment Funds Association's database[10]. The findings suggest that as a country's per capita income rises, the proportion of long-term mutual fund assets in its gross domestic product increases Further, the study suggests that mutual fund markets in developing countries have significant

[10] https://iifa.ca/

growth potential as their populations age, middle classes expand, and investors gain a better understanding of the benefits of mutual fund investments. Plantier (2014) devotes special attention to China's mutual fund industry and based on the statistical analysis suggests that the industry has immense potential to grow over the next several decades. Based on the expectation that GDP per capita could reach $40,000 in China by 2050 (Keohane 2011), the analysis suggests that China's long-term mutual fund assets could reach USD 11.8 trillion (from USD 3.5 trillion as in 2021). This figure is based on assumption that China has no DC plan system that allows participants to invest in mutual funds. If China does develop a DC pension plan system, then its mutual fund asset could be even larger. The study maintains that such potential for mutual fund growth is not limited to China. Rising per capita income, growing wealth, and economic and financial development in emerging market economies across the world is likely to foster the growth of mutual fund industries in many other regions.

In a country level study focused on USA, Reid (2000) attributed the increased demand for mutual funds in US to equity price increase, stable and low interest rates along with low levels of inflation. Additional stimulus for growth of mutual funds was provided by the expansion of retirement savings plans (employer-sponsored 401(k) plans and individual retirement accounts (IRAs)). This is evident from the increase in assets of retirement savings plans in mutual funds from 20 per cent of all fund assets in the early nineties to more than 33 percent by the end of the decade. Lowering the cost of acquiring and holding mutual funds along with the increase in number and variety of mutual funds has been another contributing factor for growth of mutual funds. Fink (2011) also discussed the growth and development of the mutual fund industry in the USA. This study too identified tax advantages of opening funds, encouragement of Individual Retirement Accounts (IRAs) and the advantage of money market fund over bank deposits as the factors behind the explosive growth of the industry in the country. Varga & Wengert (2010) examines the growth of mutual funds in Brazil and observes that exemption of mutual funds from the tax on

financial transactions has been a major factor behind the creation of exclusive mutual funds for company pension funds which, in turn, has contributed to the rapid development of the Brazilian mutual fund industry. Using a time series data and univariate and multivariate regression analysis the study suggests that professional management, diversification, lower transaction costs and liquidity provided by MF products are some other factors explaining significant growth of MFs in Brazil.

Using quantitative analysis of data for period 2007-2012 related to country comparison based on peer group Cvetanovski (2015) studies the performance of the mutual fund industry of Republic of Macedonia. The result analysis revealed insignificant performance of the industry and identified the limiting factors to be economic state and slow growth of the country, low personal income of the population with saving deposits the most preferred form of domestic savings, lack of investor education related to sophisticated investment forms.

3. Research gaps and contribution to literature

A detailed review of literature as preceding sections in section 2 bring up certain gap in literature related to the topic of current performance and future potential of institutional investment in India.

- DII participation in Indian stock market gained momentum in the last few years, particularly since 2015. However, there is limited literature covering the period since 2015. The work by Salar (2019) considers a period till 2016. However, with important policy interventions, like, demonetization, GST all taking place since 2016, studies without covering the post 2016 period are likely to be rather limited in scope.
- Very few studies have discussed the impact of DII on both stock market returns and volatility. Studies are mostly preoccupied with focus on examination of relationship between returns and flow. The few studies (Thenmozhi (2009), Naik and Padhi (2015)) which discuss volatility are based on relatively earlier periods and hence fail to consider the last few years when the markets witnessed sharp increase in DII participation. Parab (2020) do explicitly study the impact of demonetization but does so only on returns while ignoring the volatility discussion completely.
- Though there are few studies involving India that discusses the participation of DIIs and their growing importance in impacting stock market performance in the country, none of the studies focus on examining the factors that can help to gauge the likely potential of DII in being a driving force behind the equity market performance in India.
- To assess the future growth potential of a country's mutual fund industry, insights from other countries are crucial. Understanding the mutual fund growth drivers in these countries is likely to provide valuable understanding in this direction and contribute to effective policymaking. Literature in this area has more country specific studies than multi-country ones. However, multi-country studies are essential for understanding the impact of diverse

country-level factors on the industry. The few existing multi country studies listed above primarily focus on earlier periods, making recent research particularly important.

- Some of the existing multi-country studies (Fernando, 2003 and Khorana, 2004) cover large cross sections of countries. However, given that they were set in relatively earlier periods, the case of important developing and emerging countries where the mutual funds industries were at nascent stages at the time, may not have been represented well. India grew faster between 2005-2021 as compared to 1992-2001 (table 1). Its share in total world assets increased from 0.2 per cent in 2005 to 0.7 per cent in 2021. China, Pakistan, Philippines started reporting data much later. Philippines has been reporting since 1999, Pakistan from 2006 and China from 2007.
- Most of the existing multi-country studies involve econometric analysis based on cross section data (Plantier, 2014) while country level studies use time series data (Reid, 2000, Varga & Wengert, 2010, Fink, 2011, Cvetanovski, 2015). Using panel data rather than cross section or time series data has advantages as pointed out by Baltagi and Kao(2001). Klapper et al. (2004) and Khorana et al. (2005) did use panel estimation with former study using fixed effect and random effect estimation to arrive at the results and latter using pooled ordinary least squared estimation (ignoring country specific fixed effects). Klapper et al. (2004) accounted for reverse causality and endogeneity, the analysis incorporated the lagged values of explanatory variables. However, this is a conservative approach which is likely to dampen the effect of the variables.

Against this backdrop, the thesis seeks to examine the current performance of the domestic institutional investments in India, its dynamic interrelations with stock market returns and volatility. Based on mutual fund growth drivers from demand, supply and regulatory sides from a panel of countries, the thesis seeks to investigate the future potential of the DIIs in being an active dominant force behind stock market performance in India.

The novelty of the study lies in its focus on DII performance. The analysis of the DII performance, which is based on number of empirical models aims at examining if DII can fill up for FII and provide the much-needed stability to the stock market in the face of the latter's exodus from the country. Second, based on a panel estimation exercise, the research identifies the aggregate demand, aggregate supply and regulatory factors that have been important drivers of mutual fund industry growth in countries across the world. Further, the asymmetric effect of these factors on countries based on their development status is studies. Finally, findings from the panel study, combined with a statistical analysis of the Indian context, are used to assess the potential future performance of domestic institutional investors in the country. Existing literature has been preoccupied with FIIs impact on the stock market performance. This is primarily because FIIs have been the main source of non-debt funds in India since the last thirty years. As compared to that, growth of DII in the country picked up only in the last five years and hence studies related to DII in India, particularly a comprehensive one is missing.

Contribution to Literature

This thesis makes five major contributions. First, while most prior studies, both in India and internationally, concentrate on mutual fund flows and their relationship with market returns and volatility, they often overlook other components of domestic institutional investment, such as pension funds, insurance companies, banks, and other financial institutions. The relationship between stock market returns, volatility, and these additional DII components has received little attention. This thesis addresses this gap by examining mutual funds alongside these other DII components, exploring their distinct interrelationships with both flow-return and flow-volatility dynamics.

Second, unlike previous studies that examine either mutual funds alone or total DII flows in exploring the flow-return or flow-volatility relationships, this thesis separates mutual funds from other DII components and examines how each type

of flow interacts with both return and volatility. This distinction is essential, as these two DII components differ significantly as investment options. Mutual funds have become a popular choice for retail investors due to their flexibility and accessibility, while other DIIs—such as insurance companies, pension funds, banks, and financial institutions—are often leveraged by policymakers to stabilize markets during crises. Consequently, mutual funds represent a more stable and long-term component of DII investments, whereas other DIIs typically respond more to short-term market conditions or contingent needs.

Third, DII participation in the Indian stock market has surged in recent years, particularly since 2015. However, limited research addresses this period. Major domestic policy changes, such as demonetization and the implementation of GST since 2016, mean that studies excluding the post-2016 period may lack comprehensive insight. This thesis examines the distinct impacts of these policy shocks, alongside the effects of global events like the Global Financial Crisis (GFC), on the flow-return and flow-volatility relationships. This approach allows for a more robust assessment of these interrelationships.

Fourth, a unique contribution of this thesis is its focus on exploring the future growth potential of DIIs as a driving force in the Indian equity market—an area not specifically examined in existing literature. While some studies on India discuss the role and growing impact of DIIs on stock market performance, they largely overlook factors that could signal DIIs' long-term potential in this space. To bridge this gap, the thesis incorporates insights from other countries, recognizing that an analysis of mutual fund growth drivers in various markets offers valuable context for understanding India's position and informing effective policy. However, most prior research in this area consists of country-specific analyses, while multi-country studies remain limited, particularly in recent periods. Few, existing multi-country studies, such as those by Fernando (2003) and Khorana (2004), cover large cross-sections of nations but focus on earlier periods. During these times, mutual fund industries in key emerging

economies were underdeveloped and often underrepresented in data. This thesis thus fills a critical gap by offering an updated, multi-country perspective on mutual fund growth, particularly for emerging economies, enhancing the understanding of India's trajectory within a global context.

Finally, an important contribution of this thesis is its data-driven analysis of the future potential of DIIs in India through a comprehensive, multi-method approach. First, it tracks the movement of demand-side, supply-side, and regulatory factors that have been globally identified as drivers of fund industry growth, analysing how these variables have evolved in India. Second, a comparative study with Brazil and China highlights lessons for India, identifying strategic actions India might consider for strengthening its DII sector. Third, a broad factor analysis considers the political, economic, social, and regulatory conditions that could support and enhance future DII growth in India. Collectively, these approaches provide an in-depth and actionable assessment of the future potential for DII participation in India.

4. Research Objective

The objective of this thesis is to examine dynamic relation between domestic institutional investment flows and stock market returns and volatility in the light of higher domestic participation, to examine and identify the growth drivers of the mutual fund industry globally and to assess the prospects of increased robust participation of mutual funds and hence DII in Indian stock market in the future. Accordingly, the objective of this thesis is to address the following critical questions.

Objective 1: To analyze dynamic relation between DII and stock market returns in India

- Sub-Objective 1(a): Does DII total flows impact stock market return or vice versa?
- Sub-Objective 1(b): Does mutual fund flows impact stock market return or vice versa?
- Sub-Objective 1(c): Does DII flow other than mutual funds impact stock market return or vice versa?
- Sub-Objective 1(d): Do mutual fund flows and other DII flows have similar impact on stock market returns?
- Sub-Objective 1(e): Did GFC (2007-2009), Demonetization (2016), GST (2017) impact the flow return relationship for each of DII total flows, mutual fund flows and rest of other DII flows?

Objective 2: To analyze dynamic relation between DII and stock market volatility in India

- Sub-Objective 2 (a): Does DII total flows impact stock market volatility or vice versa?
- Sub-Objective 2 (b): Does mutual fund flows impact stock market volatility or vice versa?
- Sub-Objective 2 (c): Does DII flow other than mutual funds impact stock market volatility or vice versa?

- Sub-Objective 2 (d): Do mutual fund flows and other DII flows have similar impact on stock market volatility?
- Sub-Objective 2(e): Did GFC (2007-2009), Demonetization (2016), GST (2017) impact the flow volatility relationship for each of DII total flows, mutual fund flows and rest of other DII flows?

Objective 3: To identify the growth drivers of mutual fund industry globally and to assess the prospects of increased robust participation of mutual funds in India

- Sub-Objective 3(a): What are the demand side factors that have led to growth of mutual fund industry globally?
- Sub-Objective 3(b): What are the supply side factors that have led to growth of mutual fund industry globally?
- Sub-Objective 3(c): What are the regulatory factors that have led to growth of mutual fund industry globally?
- Sub-Objective 3(d): Are the demand side, supply side and regulatory factors driving mutual fund industry growth globally similar across countries with different development and income status?

Objective 4: To assess the potential of increased and sustained participation of mutual funds in India

- Sub-Objective 4(a): What are the factors that could bolster growth of mutual fund industry in India?
- Sub-Objective 4(b): What are the prospective demand, supply and legal side factors that could lead to growth of mutual funds industry in India?
- Sub-Objective 4(c): To frame policy suggestions that could result in sustained growth of mutual funds and hence DII participation in India consequently lowering equity market dependence on foreign flows into the country.

The thesis analyses the above research questions and presents a comprehensive study of the performance and potential of domestic institutional investment in equity markets in India. It analyzes the recent performance of total inflows, outflows, and net flows of DII and its components. It then explores the relationship between DII, stock market returns, and volatility, considering the impact of significant domestic and international economic and policy shocks in recent years. Thereafter, using an econometric exercise the thesis identifies drivers of mutual fund growth globally. Building on the identification of these determinants of fund growth, the thesis assesses the prospects for robust DII participation in Indian stock markets. It aims to provide policy insights and suggests a roadmap for targeted interventions to strengthen DII involvement, enhancing their potential to stabilize equity markets during periods of volatility.

5. Data and Methodology corresponding to the objectives

5.1 **Objective 1- 2:** To analyze dynamic relation between DII and stock market returns in India and DII and stock market volatility in India

Methodology*:* The dynamic relationships between DII flows and market returns and DII flows and stock market volatility are studied based on time series data for the period 2007-2021. The thesis employs a Vector Autoregressive (VAR) model for analysing the proposed relationships. The VAR model is widely regarded as one of the most effective and versatile tools for multivariate time series analysis. It extends the univariate autoregressive model to a dynamic multivariate framework (Zivot and Wang, 2006).

A baseline vector autoregressive (VAR) model analyzing the dynamic interaction of stock market return and DII flow is given by the following pair of equations as under:

$$R_t = \delta_{10} + \sum_{l=1}^{p} \delta_{11l}\, DII_{t-l} + \sum_{l=1}^{p} \delta_{12l} R_{t-l} + \varepsilon_{1t}$$

$$DII_t = \delta_{20} + \sum_{l=1}^{p} \delta_{21l}\, DII_{t-l} + \sum_{l=1}^{p} \delta_{22l} R_{t-l} + \varepsilon_{2t}$$

(5.1.1)

Similarly, a VAR model analyzing the dynamic interaction of stock market volatility and DII flows is presented as follows:

$$V_t = \alpha_{10} + \sum_{l=1}^{p} \alpha_{11l}\, DII_{t-l} + \sum_{l=1}^{p} \alpha_{12l} V_{t-l} + \varepsilon_{3t}$$

$$DII_t = \alpha_{20} + \sum_{l=1}^{p} \alpha_{21l}\, DII_{t-l} + \sum_{l=1}^{p} \alpha_{22l} V_{t-l} + \varepsilon_{4t}$$

(5.1.2)

Where, t denotes time, R_t represent returns, V_t represent conditional volatility, DII_t represent DII flows, mutual fund flows, or other DII flows. In each case, flows include three categories: outflows, inflows, and net inflows. $\varepsilon_{1t}, \varepsilon_{2t,}\, \varepsilon_{3t}$ and ε_{4t} denote the orthogonal error terms and l denotes the autoregressive lag length.

The baseline VAR models in equations (5.1.1) and (5.1.2) are extended to include control variables - net FII flows ($FIIN_t$) and interest rates (i_t). Consequently, the estimated VAR models for analysing the flow-return and flow-volatility relationships are presented as in equation (5.1.3) and equation (5.1.4) respectively.

$$R_t = \delta_{10} + \sum_{l=1}^{p} \delta_{11l}\, DII_{t-l} + \sum_{l=1}^{p} \delta_{12l} R_{t-l} + \delta_{13} FIIN_t + \delta_{14} i_t + \varepsilon_{1t}$$

$$DII_t = \delta_{20} + \sum_{l=1}^{p} \delta_{21l}\, DII_{t-l} + \sum_{l=1}^{p} \delta_{22l} R_{t-l} + \delta_{23} FIIN_t + \delta_{24} i_t + \varepsilon_{2t}$$

(5.1.3)

$$V_t = \alpha_{10} + \sum_{l=1}^{p} \alpha_{11l}\, DII_{t-l} + \sum_{l=1}^{p} \alpha_{12l} V_{t-l} + \alpha_{13} FIIN_t + \alpha_{14} i_t + \varepsilon_{3t}$$

$$DII_t = \alpha_{20} + \textstyle\sum_{l=1}^{p} \alpha_{21l}\, DII_{t-l} + \sum_{l=1}^{p} \alpha_{22l} V_{t-l} + \alpha_{23} FIIN_t + \alpha_{24} i_t + \varepsilon_{4t}$$

(5.1.4)

The models in equations (5.1.3) and (5.1.4) are further extended to incorporate three event dummy variables. This extension is based on the fact that the analysis uses time series data from 2007 to 2021, a period that includes the Global Financial Crisis (GFC) from 2007 to 2009, as well as two major domestic policy interventions—demonetization in 2016 and the implementation of GST in 2017. To assess the differential impact of these events on the interrelationships between DII flows, market returns, and volatility, dummy variables are introduced. The further extended VAR models of equations (5.3) and (5.4) are presented in equations (5.1.5) and (5.1.6) below.

$$R_t = \delta_{10} + \sum_{l=1}^{p} \delta_{11l}\, DII_{t-l} + \sum_{l=1}^{p} \delta_{12l} R_{t-l} + \delta_{13}\, FIIN_t + \delta_{14}\, i_t + \delta_{15}\, DII_{It} * D_t^E + \varepsilon_{1t}$$

$$DII_t = \delta_{20} + \sum_{l=1}^{p} \delta_{21l}\, DII_{t-l} + \sum_{l=1}^{p} \delta_{22l} R_{t-l} + \delta_{23}\, FIIN_t + \delta_{24}\, i_t + \delta_{15}\, DII_{It} * D_t^E + \varepsilon_{2t} \quad (5.1.5)$$

$$V_t = \alpha_{10} + \sum_{l=1}^{p} \alpha_{11l}\, DII_{t-l} + \sum_{l=1}^{p} \alpha_{12l} V_{t-l} + \alpha_{13}\, FIIN_t + \alpha_{14}\, i_t + \alpha_{15}\, DII_{It} * D_t^E + \varepsilon_{3t}$$

$$DII_t = \alpha_{20} + \sum_{l=1}^{p} \alpha_{21l}\, DII_{t-l} + \sum_{l=1}^{p} \alpha_{22l} V_{t-l} + \alpha_{23}\, FIIN_t + \alpha_{24}\, i_t + \alpha_{25}\, DII_{It} * D_t^E + \varepsilon_{4t} \quad (5.1.6)$$

Where, D_t^E in both equations (5.1.5) and (5.1.6) represent the dummy variable and E represents the event of either Global Financial Crisis or Demonetization or GST. D_t^E equals 1 for all years after the event (GFC/Demonetization/GST) took place. It equals zero for other years. For the GFC, months and years after September 15, 2008, are assigned a value of one. For demonetization, all months

and years after November 8, 2016, are assigned a value of one, and for GST, all months and years since July 1, 2017, are considered one. In one of the model iterations D_t^E is d15 which represents a dummy variable that captures the years from 2015 onward. It equals 1 for all years from 2015 onward and 0 otherwise.

Data

The data used for the study comprises daily information on DII flows, market returns, and control variables, including FII net flows and interest rates. The dataset contains 3,635 observations covering the period from May 3, 2007, to December 31, 2021, considering only working days. Daily data on DII flows—DII inflows (DIII), DII outflows (DIIO), and DII net flows (DIIN), as well as mutual fund inflows (MFI), mutual fund outflows (MFO), and mutual fund net flows (MFN)—are extracted from the BSE (Bombay Stock Exchange) website. Due to the unavailability of daily data on other DII flows, these are calculated as the difference between mutual fund flows and the corresponding DII flows. Henceforth, they are referred to as other DII inflows (ODIII), other DII outflows (ODIIO), and other DII net flows (ODIIN). These flows include inflows, outflows, and net flows from DIIs by insurance companies, local pension funds, and banking and financial institutions.

Following the approaches of Warther (1995) and Thenmozhi (2009), all flows are normalized by the trailing 90-day moving average of NIFTY market capitalization to account for growth in the market and funds. Daily data on interest rates i_t is represented by the yield on 10-year Indian government bonds. FII net flows (*FIIN*) are calculated from FII gross inflows and FII gross outflows, as sourced from the National Securities Depository Limited (NSDL). These flow data are also normalized using the trailing 90-day moving average of NIFTY market capitalization.

Stock market return (*R*) and its volatility (*V*) are calculated based on NIFTY index which dominates the index derivatives and is referred to as the benchmark index representing the entire Indian stock market. The Nifty Return is calculated as first difference of the natural logarithmic values of daily closing prices i.e., Return at time t is given by $R_t = \ln\left(\frac{P_t}{P_{t-1}}\right)$, where, P_t denotes price at time *t* and P_{t-1} denotes price at time *t-1*.

The volatility of returns (V_t) is estimated using an ARMA-TARCH model. The estimation of volatility yields two equations – first, is the mean equation and the second is the variance equation. The Autoregressive integrated moving average (ARMA) estimates the mean equation, and the Threshold autoregressive conditional heteroscedasticity (TARCH) model measures the conditional (time varying) variance. The steps for volatility estimation using ARMA are described as follows.

The daily stock return based on Nifty (R_t) is tested for auto correlation and is found to exhibit statistically significant autocorrelation at lag 1. This suggest that the R_t series is an autoregressive process of order 1 or AR (1) process i.e.,

$R_t = \alpha_0 + \alpha_1 R_{t-1} + v_t$

Where, v_t, the white noise term is independent and identically distributed,

N (0, σ_a^2) and

$E(R_t|R_{t-1}) = \alpha_0 + \alpha_1 R_{t-1}$ and

$Var(R_t|R_{t-1}) = Var(\alpha_t) = \sigma_a^2$

That is, given past return, the current return has a mean of $(\alpha_0 + \alpha_1 R_{t-1})$ and standard deviation σ_a^2. Thus, the conditional mean and variance of R_t given R_{t-1} is given as under:

$$\mu_t = E(R_t|R_{t-1}) = \frac{\alpha_0}{1 - \alpha_1}$$

$\sigma_t^2 = Var(R_t|R_{t-1}) = E[(R_t - \mu_t)^2|R_{t-1}]$

The TARCH model, used to measure conditional variance, originates from the Autoregressive Conditional Heteroscedasticity (ARCH) model developed by Engle (1982), which provides a systematic framework for modelling volatility. The fundamental concept of the ARCH model is that the shock (θ_t) to an asset's return is serially uncorrelated but dependent on its own lagged values. This model was later generalized by Bollerslev (1987) to create the GARCH model, which offers a simpler and more parsimonious parametric function for describing volatility evolution compared to the ARCH(m) model (Dhingra et al., 2016). Both ARCH and GARCH models share a limitation in that they assume an equal response of asset prices to positive and negative shocks, failing to capture the leverage effect or the information asymmetry regarding how asset prices react to different types of shocks. Specifically, bad news tends to be followed by a relatively larger increase in price volatility compared to good news (positive returns) of the same magnitude, indicating that these two types of news exert asymmetrical effects on asset prices. Consequently, both ARCH and GARCH models do not adequately account for this asymmetry in stock returns.

The Threshold GARCH (TGARCH) or TARCH model, developed by Glosten et al. (1993), is one of the most suitable volatility models that allows for asymmetric effects (Dhingra et al., 2016). A TARCH(m, s) model is defined as follows:

$$\sigma_t^2 = \lambda_0 + \sum_{i=1}^{s}(\lambda_i + \beta_i N_{t-i})\theta_{t-i}^2 + \sum_{j=1}^{m}\gamma_j\,\sigma_{t-j}^2$$

Where,

$$N_{t-i} = \begin{cases} 1, & \text{if } \theta_{t-i} < 0 \\ 0, & \text{if } \theta_{t-i} \geq 0 \end{cases}$$

In this model, λ_i and γ_j represent respectively the ARCH terms and GARCH terms while the term β_i captures the asymmetric effect of good news and bad

news. Positive news ($\theta_{t-i} > 0$) contributes $\lambda_i \theta_{t-i}^2$ to σ_t^2 while negative news ($\theta_{t-i} < 0$) contributes a larger value $(\lambda_i + \beta_i)\ \theta_{t-i}^2$ to σ_t^2. Zero is used as a threshold for separating the impacts of past shocks. The present paper models the volatility (V_t) of stock returns as TARCH (1,1) process. This is represented as follows:

$$\sigma_t^2 = V_t = \lambda_0 + (\lambda_1 + \beta_1 N_{t-1})\theta_{t-1}^2 + \gamma_1 \sigma_{t-1}^2$$

5.2 Objective 3: To identify the growth drivers of mutual fund industry globally

Methodology

Growth of mutual fund industry, like any other industry is the result of demand and supply factors and their interactions (Klapper et al., 2004). Another important set of factors that literature has identified as driver of growth of fund industry are relevant laws and regulations. Thus, based on general understanding and discussion in earlier literature, the present paper classifies the growth determinants of mutual fund industry into three broad categories – a) Demand side factors; b) Supply side factors and c) Legal and Regulatory factors.

Demand side factors

Demand for mutual funds, like demand for any other product or service, reflects consumers' willingness to have the product, supported by their ability to pay. It is hypothesized that educated and financially sophisticated consumers are more inclined to purchase mutual funds. A consumer's ability to pay is directly related to their income and wealth. Other factors likely to drive demand for mutual funds include the returns on these investments, consumer knowledge of the industry and its products, and government tax policies. Consequently, the demand-side determinants in the empirical model include consumers'

purchasing power, real interest rates, and access to information about the fund industry and its offerings. The variables used to measure each of these determinants are presented in column (2) of table 5.2.1. Consumer education is excluded from the model due to the lack of available country-level time series data, and taxation policies are omitted because they are challenging to document and quantify (Klapper et al., 2004).

Supply side factors

Supply-side factors encompass characteristics of the financial services sector that can influence the growth of the mutual fund industry. This study considers security market development, the strength of distribution channels, and index returns as key supply-side factors. A well-developed and dynamic security market provides broader investment opportunities, higher liquidity, lower transaction costs, improved market efficiency, and stronger regulatory oversight and transparency. Distribution channels are crucial in connecting mutual fund companies with potential investors; a robust distribution network allows fund companies to penetrate various market segments and regions, broadening their investor base and maximizing reach. Additionally, the expansion of distribution networks often brings innovation and technological advancements, as seen in recent years (OECD, 2020). Finally, increasing index returns support industry growth by enhancing asset valuations, improving investment performance, and expanding fund offerings. Column (2) of table 5.2.1 details the supply-side factors included in the empirical model along with their measures.

Legal and Regulatory factors

Extensive literature highlights the critical role of a robust legal and regulatory environment in fostering financial sector growth. Drawing from previous studies (La Porta et al., 1998; Khorana et al., 2005), this analysis hypothesizes that a strong legal framework enhances public interest in mutual fund investments. Regulations aimed at protecting investors are likely to boost consumer confidence and, consequently, their willingness to invest in mutual

funds. The legal and regulatory variables included in the model are investor protection and corruption levels, with details on the measurement of these indicators provided in column (2) of table 5.2.1.

Based on identification of these three sets of factors, the empirical model proposed by the study for examining the determinants of growth of the mutual fund industry in a country is presented as follows:

$$S_{it} = \alpha_i + \alpha_t + \sum_s \beta_s DF_{it} + \sum_s \theta_s SF_{it} + \sum_s \varphi_s LRF_{it} + \varepsilon_{it} \quad 5.2.1$$

Equation (5.2.1) models the size of the mutual fund industry in country *i* at time *t* (S_{it}) as a function of demand-side factors (DF_{it}), the supply side factors (SF_{it}) and legal and regulatory factors (LRF_{it}). The parameters α_i and α_t account for unobserved country-specific and time-specific idiosyncrasies affecting industry size. Additionally, the model includes a stochastic error term ε_{it}, assumed to be independently and identically distributed (*iid*) with a mean of zero and constant variance σ^2. The parameters of interest to estimate in equation (5.2.1) are - β_s, θ_s and φ_s.

Equation (5.2.1) outlines the econometric model to be estimated in order to identify the key factors influencing the growth of the mutual fund industry in a country. However, the equation may encounter several generic identification issues that must be addressed before selecting an estimation method.

First, unobserved heterogeneity may arise from individual country effects. Second, the equation is presented in a static form. While fixed effects estimation can help mitigate the first issue, considering a dynamic specification that incorporates a lagged dependent variable may better address the second problem. This dynamic approach can also help alleviate potential serial correlation issues associated with fixed effects estimation. Nevertheless, endogeneity may still arise from transitory shocks. Incorporating time dummies

in the fixed effects estimation can help address this concern. However, systematic feedback effects between demand-side, supply-side, and regulatory variables may lead to endogeneity as well. For instance, improved laws and regulations may foster the growth of the fund industry, while a mature fund industry may also prompt better regulatory frameworks. In such cases, changes in legal and regulatory variables may correlate with unobserved growth shocks affecting the fund industry, which are captured in the error term. Similar endogeneity issues may also exist between demand-side and supply-side factors.

To mitigate the potential feedback effects, lagging all explanatory variables in the equation by one period may be an option, though this conservative approach could dampen the impact of the variables. A more effective way to address the endogeneity problem is to employ an instrumental variable two-step system generalized method of moments (GMM) estimation for Equation (5.2.1). This estimation method (Arellano and Bover, 1995; Blundell and Bond, 1998) also accounts for unobserved measurement errors in the construction of all variables included in the equation.

Equation 5.2.1 is also the estimated separately for advanced countries and emerging and developing countries, given their distinct economic, social, and institutional characteristics. Analysing industry growth factors individually for each group is necessary, but splitting the dataset reduces the cross-sectional dimension of the panel data, rendering system GMM unsuitable as an estimation technique (Roodman, 2009). Therefore, these specifications are estimated using dynamic fixed effects, with all explanatory variables lagged by one period.

Table 5.2.1: Details of variables and their measurements

Variables	**Measure**	**Hypothesized/Intuitive impact**

Dependent Variable		
Size of Mutual Fund Industry $\frac{AUM}{GDP}$	Level of net assets in relation to national income as measured by the ratio of Asset under Management (AUM) to GDP	
Independent Variables		
Demand side		
Consumers' ability to pay for the product as reflected by nation's income and wealth $GDPPC$	GDP per capita	Higher GDP per capita indicates higher income levels, which in turn drives greater demand for mutual funds.
Real interest rates r	Real interest rates measured as bank lending interest rate adjusted for inflation as measured by the GDP deflator.	As real interest rates increase, investors tend to favour fixed-income securities with shorter durations or higher credit quality. In contrast, a decline in real interest rates is expected to lead to increased investments in high-

		yield equities, bonds, or alternative assets to boost returns.
Consumer's information about the industry and its products $Intpen$	Internet penetration as measured by individuals using the Internet as percentage of population.	Greater penetration leads to easier access to information about products, thereby increasing consumer interest in making purchases.
Supply side factors		
Security market development $FIDI$ & $FMDI$ and $FIEI$ & $FMEI$	Measured by Financial Institutions Depth (FID) Index, Financial Market Depth (FMD) Index, Financial Institutions Efficiency (FIE) Index and Financial Market Efficiency (FME) Index as measured and published by IMF's Financial Development Index Database[11]. FID compiles data on mutual fund assets as a percentage of GDP, pension fund assets to GDP, bank credit to the private sector relative to GDP, and life and non-life insurance premiums	Well-developed financial institutions and markets, characterized by depth (size and liquidity) and efficiency, are likely to attract more investors and boost their confidence, leading to stable growth in the industry.

[11] https://data.imf.org/?sk=F8032E80-B36C-43B1-AC26-493C5B1CD33B&sId=1480712464593

	to GDP. Meanwhile, FMD gathers information on stock market capitalization to GDP, stocks traded to GDP, international debt securities issued by governments to GDP, and total debt securities of both financial and non-financial corporations to GDP. FIE collects data on the banking sector's net margin, the lending-deposit spread, non-interest income as a proportion of total income, overhead costs relative to total assets, and returns on assets and equities. Additionally, FME compiles data on the stock market turnover ratio, which measures stocks traded relative to market capitalization.	
Strength of distribution channels $Bkbranch$	Measured by number of bank branches (per lakh adults)	A broader array of distribution channels for selling mutual funds to investors is likely to positively influence the size of the fund industry (Khorana et al., 2005).

Index Return $Indexret$	Index Return (Percentage)	Increasing returns suggest that investments within the index are performing well, which is likely to have a significant positive impact on the growth of funds (Klapper et al., 2004).
Legal Factors	**Measure**	**Rationale**
Investor protection $Invprot$	Measured by ranks as in Global competitive index reported by Global Competitiveness Report compiled by World Economic Forum[12]. Investors' protection is measured as a composite variable combining the Extent of disclosure index, the Extent of director liability index and the Ease of shareholder suit index.	Higher levels of investor protection indicate a strong legal and regulatory framework. Additionally, lower corruption fosters an environment where investor protection is prioritized and enforced, boosting investor confidence. It is hypothesized that improvements in both of these indices serve as key drivers of investors' willingness
Corruption $Corr$	Corruption or Incidence of corruption index in Global Competitiveness index measures the perception of business	

[12] https://www.weforum.org/reports

	community of the level of corruption in public sector.	to invest in mutual funds.

Source: Compiled by Author

Data

This study analyses data from 38 countries: Argentina, Australia, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, India, Italy, Japan, the Republic of Korea, Mexico, the Netherlands, New Zealand, Norway, Pakistan, the Philippines, Poland, Portugal, Romania, South Africa, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. These countries are categorized as either advanced or emerging and developing economies based on the International Monetary Fund's World Economic Outlook database classification.

The selection of countries began with the top 75 countries by GDP value, which were then matched with the list of countries identified as having a mutual fund industry according to the Investment Company Institute. The study examines annual data on mutual fund net assets as a percentage of GDP for each country from 2005 to 2021. While data is readily available for some independent variables, others had to be constructed from various sources. Consequently, 2005 was identified as the starting year for the analysis, although for some countries—such as Argentina, Bulgaria, Canada, China, Hungary, and Pakistan—that began reporting data later, the starting year corresponds to the first year for which official data is available. This comprehensive matching and filtering process resulted in a final unbalanced dataset containing 630 observations. The data sources considered are as follows:

- Demand side variables – World Bank World Development Indicators database[13].
- Supply side variables – IMF World Economic Outlook database and World Bank World Development Indicators database.
- Legal Factors – World Economic Forum's Global Competitiveness Report[14].

5.3 Objective 4: To assess the potential of increased and sustained participation of mutual funds in India

Methodology

To analyse and gauges the potential for growth of DII participation in India, the thesis utilizes three methods First, based on the determinants of mutual fund growth identified through the panel estimation exercise for objective 3, the current performance and hence the potential of mutual fund performance in India is examined. Second, a comparative analysis of the growth and performance of mutual fund industry in similar emerging economies are studied and finally, a broad factor analysis (commonly referred to as the PEST analysis) to identify the conducive external environment in the economy is conducted and the political, economic, social and technological factors likely to facilitate the fund industry growth are identified.

Data

Data for this part of the study is based on official sources like World Bank, International Monetary Fund, Reserve Bank of India and databases like

[13] https://data.worldbank.org/indicator

[14] https://www.weforum.org/reports

Bloomberg[15], Investment Company Institute[16], EPW Research Foundation[17] and published research papers, articles and news articles.

[15] https://www.bloomberg.com/asia

[16] https://www.ici.org/

[17] https://epwrfits.in/

6. Results and Discussion

6.1 Results of VAR model addressing objectives 1 and 2

The VAR model for examining dynamic relationship between DII flows and returns (controlling for FII net flows and interest rates) yield the following results:

- DII lagged values & lagged returns: There are strong evidence of unidirectional causality running from returns to DII net flows. However, the inflows and outflows of total DII and other DII flows do share bidirectional causal relationship with returns.
- DII flows are very well explained by their own lagged values (driven equally by MFs & other DIIs up to 5 lags) and by lagged values of returns. The average of adjusted R^2values stand at 0.38.
- Returns impact DII flows significantly and through both the constituent channels. The net response of both mutual fund and other DII flows to movement in returns is negative resulting eventually in negative response of DII net inflows to returns. Thus, an increase in returns triggers DII outflows and lowers inflows. This feature provides robust evidence of negative feedback trading by the domestic investors.
- DII flows do not show any significant impact on returns. Overall impact of flows on market returns are found to be marginal.
- Mutual fund flows do not affect returns at all. However, this trend changed in the post GFC period when mutual fund inflows did become relatively active components of DIIs.
- The marginal impact of DIIs on returns increased in the post Demonetization period due to stronger impact of ODII net flows.
- This flow return relationship remained immune to any differential impact due to GST implementation.

- Returns responded to total DII flows through other DII flows only while mutual funds remained passive players in this transmission

The VAR model to examine dynamic relationship between DII flows and volatility yield the following results:

- Strong evidence of unidirectional causality running from DII net flows (DIIN) to Nifty returns volatility. However, DII inflows (DIII) and outflows (DIIO) individually share bidirectional causal relationship with volatility.
- There has been decline in this volatility caused by mutual fund flows into the market in last few years.
- For the entire period of study, ODII inflows are found to have helped to lower volatility and have a stabilizing effect on return volatility. These results auger well with the growing argument that DIIs may help to counteract the destabilizing effect of flight of FIIs from the country.
- GFC has been the most important event increasing the response of DII inflows and outflows to volatility. Demonetization and GST had no effect whatsoever on the impact of flows on volatility. Impact of DII flows on volatility increased in the aftermath of GFC due to increased response of volatility to mutual fund inflows and the outflows of mutual funds as well as other DIIs. However, this response remained relatively subdued in the more recent periods.

6.2 Results of econometric modelling addressing objective 3

The results of the GMM estimation of the econometric model yield the following results.

- The key demand-side factors influencing mutual fund growth as highlighted by the results include national income and wealth, real interest rates, and consumer access to information. The GDP per capita coefficient is positive and aligns intuitively; a 1 per cent increase in GDP

per capita raises nations' income and wealth, resulting in a 0.03 per cent increase in AUM to GDP. This estimate falls between the findings of Khorana et al. (2005) and Klapper et al. (2004) and is consistent with previous research. The real interest rate coefficient, also positive, indicates that a one-percentage-point increase results in a 0.5 per cent rise in AUM to GDP. This result contrasts somewhat with Klapper et al. (2004), which finds a negative effect of real interest rates when aggregating all countries but identifies a statistically significant positive effect only in high-income countries. For middle-income countries, Klapper et al. (2004) notes a positive effect restricted to equity and money market funds. The broader positive effect observed here may relate to the study period analysed, as rising real interest rates tend to increase investor preference for fixed-income assets like bonds over equities. This shift occurs because higher real interest rates can suppress consumption and production, thereby affecting company earnings and share prices. Over recent decades heightened global economic interconnectedness has increased exposure to economic uncertainty and financial crises, possibly leading investors to become more selective in their investment choices. Internet penetration, used as an indicator of consumer access to information, shows a negative coefficient. This result is unexpected and differs from previous studies (Khorana et al., 2005; Plantier, 2014). One possible explanation is that information overload may have overwhelmed investors, making decision-making more challenging. Alternatively, the negative impact could stem from an expanded range of online investment options, which has increased competition.

- On the supply side, statistically significant factors include security market development and index returns. Recognizing that large markets are not always efficient (Levine and Zervos, 1998), this study considers both the depth and efficiency of financial markets and institutions. The

coefficients for three variables—FIDI, FMDI, and FIEI—are positive and statistically significant, highlighting that robust financial institutions with both depth and efficiency have greatly contributed to the growth of the fund industry. Specifically, a unit increase in depth raises AUM/GDP by 20 per cent, while an improvement in efficiency leads to a 16 per cent increase in investment growth. Depth in financial markets is also impactful, with a unit increase in the financial market depth index yielding an 8.8 per cent growth in fund investment. Higher index returns further stimulate investment growth, where each percentage point increase in returns corresponds to a 0.03 per cent rise in AUM to GDP. These findings align with existing literature (Klapper et al., 2004; Plantier, 2014). However, legal and regulatory variables do not show statistical significance, which contrasts with Khorana et al. (2005).

- The panel results are robust to controls for time-invariant variables, various time-varying factors included in the equation, and time effects. Additionally, the model is tested with alternative time specifications to account for economic and financial events within the 17-year sample period, notably the Global Financial Crisis (2007–2009) and the Global Pandemic (2020–2021). To ensure robustness, two model variants are examined: one excluding the GFC years (2007–2009) and the other excluding the pandemic years (2020–2021). These alternative specifications, presented in columns (3) and (4) of table 5.4, confirm the consistency of the baseline results.
- The results of the separate estimations for advanced and developing countries reveal that reveal notable differences between advanced and developing countries. In developing countries, GDP per capita—reflecting nations' income and wealth growth—is the sole demand-side factor driving mutual fund investment. On the supply side, both financial

market depth and efficiency are statistically significant with expected positive effects.

To sum up, the panel estimation results reveal several key findings: (i) demand-side factors such as income and wealth, real interest rates, and investor awareness account for a significant portion of the variation in mutual fund industry growth across countries. (ii) on the supply side, index returns have been a global driver of fund investment, but the primary factors facilitating the growth of the fund industry worldwide are the depth and efficiency of financial institutions and financial markets. (iii) legal and regulatory factors have not played a significant role. (iv) the factors influencing mutual fund growth differ across countries based on their development status. In advanced countries, both demand- and supply-side factors have contributed equally to the growth of the mutual fund industry, with GDP per capita, real interest rates, financial institution depth, and financial market efficiency identified as key determinants. In contrast, in developing countries, supply-side factors—particularly financial market depth and efficiency—are more influential, while income and wealth are the only demand-side factors that have supported the fund industry's growth.

The growth of the global mutual fund industry is influenced by a combination of demand and supply-side factors. Key drivers include consumers' purchasing power, higher bank lending rates, increased efficiency of financial institutions, and larger, more liquid financial markets. However, the impact of each of these factors appear to be much nuanced when the countries are classified based on income status into advanced and developing countries. For both these categories of countries, the development and efficiency of financial markets and institutions are crucial. Advanced countries, with their well-developed financial markets, benefit from improved efficiency, size, and liquidity of institutions. In contrast, developing countries, which lag in financial development, must focus on achieving substantial catch-up growth and efficiency in their markets. Any

improvements in these areas are likely to lead to significant growth in the mutual fund industry.

6.3 Results of analysis addressing objective 4

6.3.1 Analysis based on factors identified from panel estimation exercise

Building on the identified global determinants of mutual fund growth based on panel estimation exercise discussed in section 6.2, this section examines the trends of these variables in India over time to assess whether they are moving in a direction conducive to fund industry growth. India's GDP per capita has shown a steady upward trend during the last two and a half decade with an impressive rise, excluding 2020—the year of the global pandemic. Notably, India's post-pandemic growth recovery has outpaced that of most major economies, standing out on the global stage. Over the past decade (excluding 2020), India's GDP per capita in constant local currency has grown at an average annual rate of 6.15 percent (World Development Indicators). The World Bank and IMF project India's GDP growth to reach 7 percent in fiscal year 2025, driven primarily by a surge in private consumption. Looking forward, the World Bank anticipates that India's medium-term economic outlook will remain strong, supporting sustained growth in the years to come.

The IMF's data on the financial market and institutions depth index provides insights into the development of financial institutions and markets in terms of size and liquidity. The institutions depth index includes data on mutual fund assets as a percentage of GDP, along with bank credit to the private sector, pension fund assets, and insurance premiums, all measured as percentages of GDP. Meanwhile, financial market depth encompasses stock market capitalization to GDP, stocks traded to GDP, international government debt securities to GDP, and total debt securities of financial and non-financial corporations to GDP.

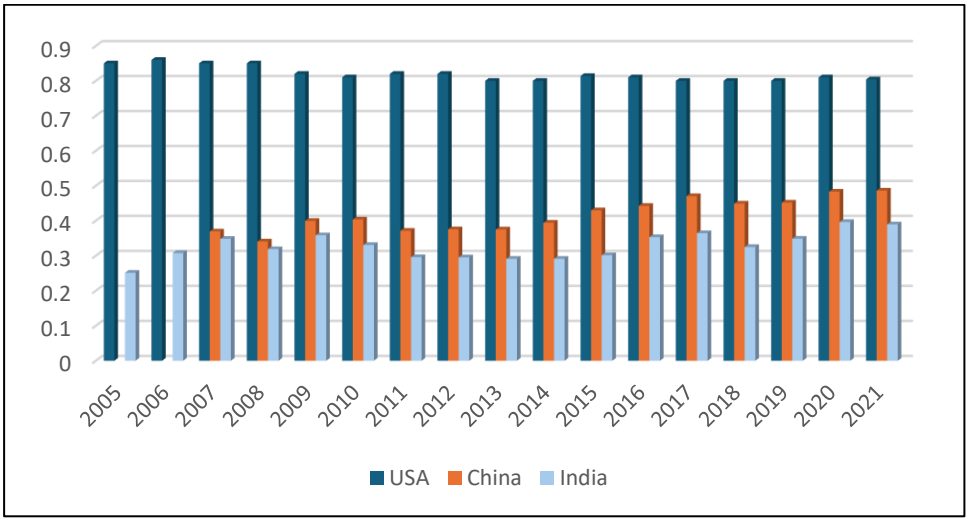
From 2000 to 2021, India's financial institutions depth index (FIDI) averaged 0.33, compared to 0.82 for the USA and 0.42 for China. The Financial Market

Depth Index (FMDI) for India averaged 0.55, against 0.98 for the USA and 0.60 for China. While India's FIDI has shown a slight uptrend and FMDI has seen minor fluctuations, both indices remain significantly lower than those of peer emerging economies like China and high-ranking countries such as the USA (see figures 6.3.1a and 6.3.1b). Thus, India has ample room for improvement in terms of financial institutions and markets' size and liquidity.

Conversely, India's performance on the financial market and institutions efficiency index has been impressive. These figures assess institutions' ability to provide financial services affordably and sustainably and the level of capital market activity. India's institutional efficiency has consistently exceeded that of both the USA and China (figure 6.3.2a), despite minor fluctuations in recent years. In market efficiency (figure 6.3.2b), India has outperformed China and, at times, has been nearly on par with the USA. However, the index has seen substantial fluctuations over time, with notable dips between 2012 and 2017, though it has risen considerably since 2020.

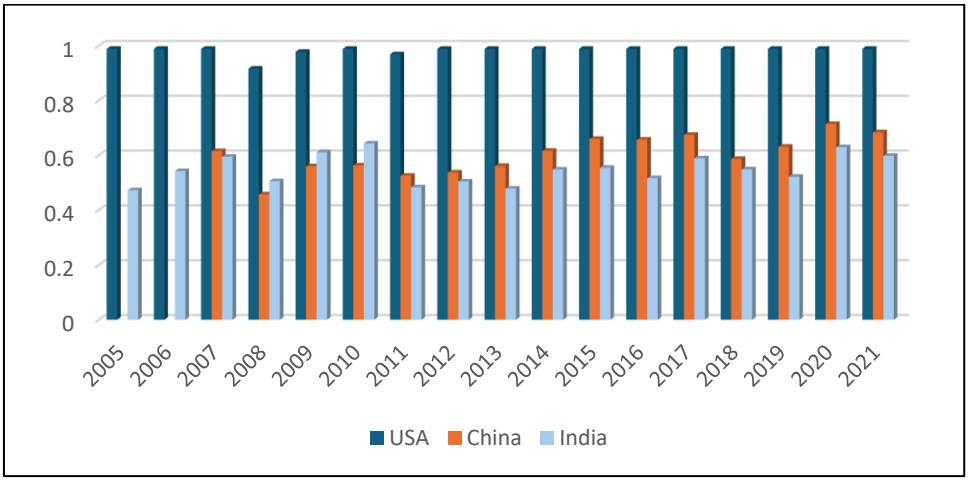
Thus, India's financial performance in terms of size and liquidity requires policy attention, while the existing efficiency of institutions and markets should be stabilized and sustained.

Figure 6.3.1a: Financial Institution Depth Index in India compared to that in USA and China



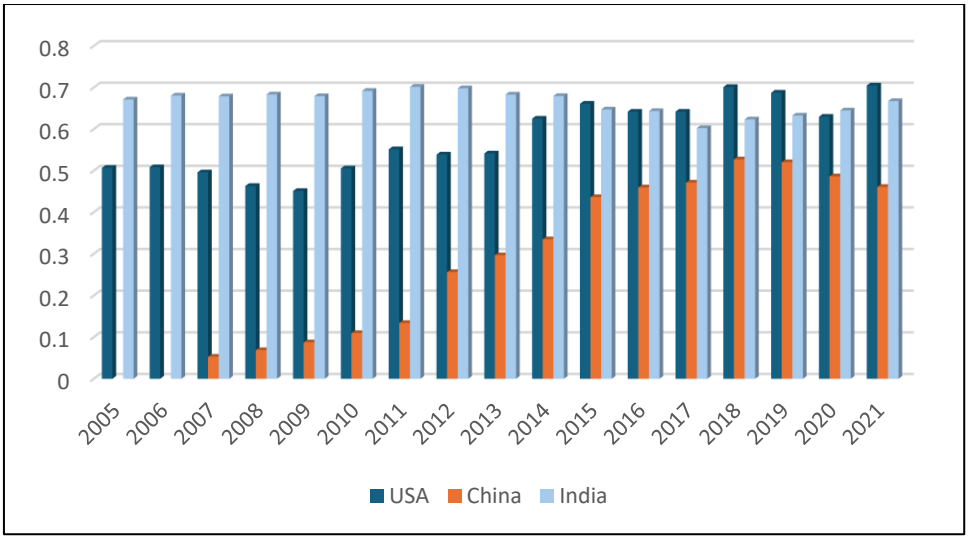
Source: Based on data from IMF

Figure 6.3.2b: Financial Market Depth Index in India compared to that in USA and China



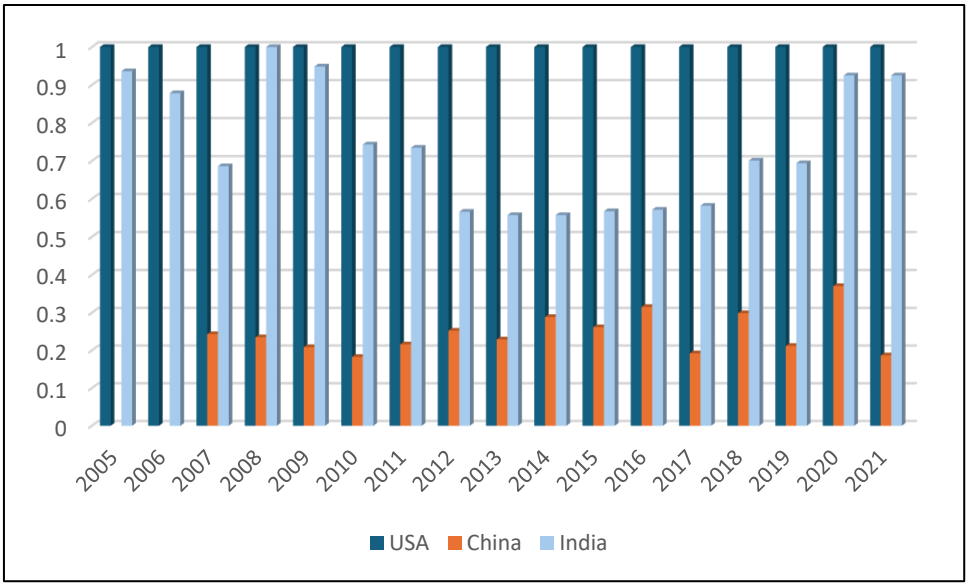
Source: Based on data from IMF

Figure 6.3.2a: Financial Institutions Efficiency Index in India compared to that in USA and China



Source: Based on data from IMF

Figure 6.3.2b: Financial Market Efficiency Index in India compared to that in USA and China



Source: Based on data from IMF

6.3.2 A comparative analysis of performance of mutual fund industry in other emerging economies

This section compares the performance of mutual funds in India with those in peer emerging economies, specifically Brazil and China. China and Brazil are selected for comparison because they offer meaningful parallels with India in terms of population size, growth potential and market dynamics. China, with a similarly large population, serves as a benchmark for large-scale market potential, infrastructure development and economic transformation. Brazil, though smaller in population, represents Latin America's largest market. Its emerging economy status, large middle class and its resource-rich profile make it an important reference for understanding market growth.

Table 6.3.2.1 provides data on the assets under management (AUM) of mutual funds, GDP at market prices, and the mutual fund AUM to GDP ratio for India, Brazil, and China since 2007. Among these, Brazil recorded the highest AUM to GDP ratio, ranging from 43 per cent to 77 per cent with a steady increase over the period, achieving a compound annual growth rate (CAGR) of 3.5 per cent. By contrast, China and India had notably lower AUM-to-GDP ratios, between 11.1–18.5 per cent for China and 8.3–17.1 per cent for India, respectively. Despite the lower ratios, both countries showed similar growth trends, with China and India compounding annually at rates of 3 per cent and 4 per cent, respectively.

The Brazil experience

Although less populous than India and China, Brazil consistently maintained one of the highest levels of mutual fund assets under management (AUM) during the period outlined in table 6.1. This can be attributed to Brazil's early adoption of mutual funds as an investment vehicle, beginning in 1957 with the launch of Fundo Crescinco. In 1959, the Ministry of Finance took further steps to protect investors by issuing the first regulatory document addressing mutual funds. This was reinforced in 1970 when the Central Bank of Brazil

implemented the country's initial government regulation on mutual funds, setting comprehensive guidelines for their formation, operation, and management. At the time, with no fixed-income funds available, the regulation focused on equity funds, mandating that at least 60 per cent of AUM be invested in equities. This legal structure, along with rising stock markets, led to rapid AUM growth up to 1971 (Varga and Wengert, 2010).

Throughout the 1970s and 1980s, mutual funds in Brazil held only a minor position among financial investments. In 1979, total assets under management (AUM) represented just 1 per cent of the country's monetary aggregate, M4. The introduction of fixed-income funds in 1984 provided only a modest boost, raising the share to 4 per cent. However, beginning in 1991, the mutual fund sector saw rapid growth, reaching 18 per cent of M4 by the end of 1993. This expansion accelerated in 1994 with inflation control measures, leading to unprecedented growth in mutual fund assets. Between 1995 and 2008, fixed-income funds recorded annual growth of 15 per cent, outpacing traditional savings accounts. By 2008, fixed-income fund AUM far exceeded that of savings accounts, which had once matched mutual funds in 1995 but later fell to just 29 per cent of their total.

Table 6.3.2.1: MF Assets to GDP of India, China & Brazil

MF AUM (USD Trillion)	**2007**	**2012**	**2017**	**2021**	**2023**	**Compound annual growth rate (2007-2023)**
India	0.1	0.1	0.3	0.5	0.6	11.1
China	0.4	0.4	1.9	3.5	3.3	13.2
Brazil	0.6	1.1	1.2	1.2	1.7	6.3
GDP (USD Trillion)	**2007**	**2012**	**2017**	**2021**	**2023**	
India	1.2	1.8	2.7	3.2	3.5	6.5

China	3.6	8.5	12.3	17.7	17.8	9.9
Brazil	1.4	2.5	2.1	1.6	2.2	2.7
MF AUM/GDP (%)	**2007**	**2012**	**2017**	**2021**	**2023**	
India	8.3	5.6	11.1	15.6	17.1	4.3
China	11.1	4.7	15.4	19.8	18.5	3.06
Brazil	42.9	44.0	57.1	75.0	77.3	3.5

Source: World bank Indicators for GDP, ICI for MF assets

Relative to M4, savings accounts declined significantly, dropping from 25 per cent to 12 per cent of M4, while equity funds surged with an annual growth rate of 28 per cent. The share of equity funds in total market capitalization also increased from 1 per cent to 8 per cent, indicating a shift from direct stock investments to fund-based investments. Overall, mutual funds grew from 26 per cent to 46 per cent of M4 during this period, peaking at 57 per cent in 2007 (Varga and Wengert, 2010). Since then, the mutual fund industry has continued its steady upward trajectory.

Varga and Wengert (2010) attribute this growth to increasing market sophistication, the expansion of derivatives, and globalization, which have created numerous investment opportunities that are often challenging for individual investors to access directly but are readily available through mutual funds. Regulatory interventions have also reinforced investor protections and enhanced information transparency. Additionally, government taxation policies have played a significant role in shaping the mutual fund industry. Key factors such as professional fund management, improved liquidity, greater diversification, and lower transaction costs offered by mutual funds have further driven their growth.

The China experience

The history of mutual funds in China is relatively recent, beginning only in 1998, which partially explains its lower AUM-to-GDP ratio in 2007 (Huang, 2019). The Chinese equity market itself only started in the early nineties with the establishment of the Shanghai and Shenzhen Stock Exchanges, giving mutual funds a much shorter development window compared to that of Brazil. During the initial years (1998–2009), mutual fund growth was sluggish due to extensive regulatory constraints, and it was only in 2009, with industry deregulation, that mutual funds began to expand more readily. The formation of the Asset Management Association of China (AMAC)[18] in 2012 under the China Securities Regulatory Commission (CSRC) and the updated Securities Investment Fund Law in 2013 provided a stronger legal foundation, further supporting industry growth.

Since 2015, the mutual fund sector has experienced substantial growth (see table 6.1), largely driven by two key factors: a surge in the securities market from 2013 to 2015 and the relaxation of fund establishment rules. China's mutual fund market expanded rapidly, growing from 107 to 4,957 mutual funds between 2004 and 2018, with the number of fund management companies increasing from six in 1998 to 120 by 2018. This growth reflects the combined impact of equity market expansion and more flexible regulatory policies.

Some distinctive features of China's mutual fund industry include:

- A predominance of open-ended funds, making up about 88 per cent of the market, compared to only 12 per cent for close-ended funds.
- Steady growth in new fund launches up to 2015, with a sharp rise afterward, driven mainly by hybrid and bond funds. In recent years, hybrid funds have outpaced equity funds, representing nearly half of all

[18] http://www.afca-asia.org/

funds since 2015, while equity funds comprise about 20 per cent. Money market funds also play a substantial role in the industry.

- Mutual funds have become a popular wealth management tool, yet only 39 per cent of investors expressed confidence in mutual fund investments, according to a 2017 AMAC survey. This is despite the fact that equity-oriented funds have delivered average annualized returns of 10.5 per cent, outperforming the Shanghai Stock Exchange Composite Index.

The Chinese mutual fund industry remains in a developmental stage, with investor preferences and confidence as key areas needing regulatory attention. Building investor trust is crucial for industry growth, highlighting the importance of supportive government policies.

As China's wealth and income levels are expected to rise (Plantier, 2014), the potential for mutual fund asset growth remains significant. A growing middle class and increasing investor awareness of mutual funds' benefits, such as professional management and diversification, further support this trajectory. Key drivers of mutual fund growth include per capita GDP, equity market capitalization relative to GDP, equity market turnover relative to GDP, and the ratio of defined contribution assets to GDP (Plantier, 2014).

Thus, China's mutual fund industry holds substantial growth potential, driven not only by economic expansion but also by efforts to foster investor confidence and financial literacy.

The experience of Brazil and China highlights several critical factors that can drive the growth of a mutual fund industry within an economy. These are listed as follows:

i. *Investor Confidence and Trust:* Building and maintaining investor trust is fundamental to fostering mutual fund growth. When investors,

especially retail investors, view mutual funds as secure and reliable investment options, they are more inclined to invest in them over traditional savings accounts or other familiar financial products, broadening the industry's base. Transparent and consistent fund performance, coupled with regulatory frameworks that prioritize investor protection, helps establish this confidence.

ii. *Effective Regulatory Frameworks:* Regulatory intervention plays a crucial role by setting standards for fund management, requiring disclosures, and ensuring investor protection. This framework reduces perceived investment risks, encouraging broader participation in the mutual fund market. In Brazil, early regulatory measures combined with balanced taxation policies supported the industry's initial growth, while in China, a gradual shift from strict controls to more flexible policies, along with a focus on defined contribution (DC) assets as a share of GDP facilitated expansion and fund diversification.

iii. *Rising Wealth and Middle-Class Demand:* Economic growth, along with an expanding and increasingly affluent middle class, generates demand for diversified financial products. As disposable incomes rise, individuals seek investment options that offer higher returns than traditional savings. Mutual funds meet this demand by providing accessible, professionally managed portfolios suitable for a range of risk preferences.

iv. *Mature and Diverse Fund Market:* A well-developed fund market, with professional management and a range of fund options, is crucial. Sophisticated markets offer investors access to a variety of asset classes, including specialized funds like fixed-income, hybrid, and sector-specific options. These provide opportunities for diversification and attract both retail and institutional investors.

In sum, the experiences of Brazil and China illustrate the growth potential of a mutual fund industry in any economy hinges on fostering investor confidence,

strong regulatory foundations, a demand fuelled by rising income and an affluent middle class, balanced taxation policies, and a sophisticated, mature fund market. Together, these factors create an environment conducive to sustainable industry expansion and broader financial inclusion.

Table 6.3.2.2 represents a comparative picture of India with Brazil and China with respect to macroeconomic indicators representing these factors driving the fund industry growth.

Table 6.3.2.2: Investment Behaviour across Levels of Financial Literacy

Level of Financial Literacy	**Types of Financial Assets (%)**			
	Mutual Funds	**Shares in Companies**	**Debentures/Bonds in companies**	**Shares in Co-operative Society**
Elementary	28.7	50.3	1.2	19.8
Moderate	66.5	27.5	0.2	5.8
Advanced	75.5	22.1	0.4	1.9
Illiterate	8.5	69.5	0.0	22.1
All	68.4	26.4	0.4	4.8

Source: Dash and Ranjan (2023)

6.3.3 Broad factor analysis of the potential for growth in DII participation in India

This section presents an analysis of political, economic, social and technological factors that could be the potential drivers of growth of mutual fund and hence DII participation in India.

Political Factors

Regulatory reforms by the Securities and Exchange Board of India (SEBI) have significantly enhanced investor confidence and liquidity in the equity market. By ensuring fairness, transparency, and efficiency, SEBI actively prevents fraudulent practices and oversees intermediaries like brokers and mutual funds to enforce compliance. Its initiatives in investor education—through workshops, educational materials, and grievance redressal—empower participants to make informed decisions. Additionally, SEBI's stringent regulations against insider trading, including the Prohibition of Insider Trading Regulations of 2015, further promote ethical practices. Collectively, these measures create a robust regulatory framework that encourages increased participation from domestic institutional investors in the equity market.

In addition to the regulator's reassuring efforts, various government policies and initiatives have effectively fostered the growth of domestic participation in equity markets. These initiatives include:

Streamlined investors' identity verification - The Unique Identification Authority of India (UIDAI), established in January 2016 under the Ministry of Electronics and Information Technology, Government of India operates the world's largest biometric ID system as per the Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits, and Services) Act, 2016. Described by World Bank Chief Economist Paul Romer as "the most sophisticated ID program in the world," (Forbes[19]) Aadhaar has transformed investor identity

[19] https://www.forbes.com/sites/tylerroush/2023/11/02/what-is-aadhaar-indias-id-system-sam-altman-is-reportedly-modeling-his-eye-scanning-crypto-project-worldcoin-after/

verification by facilitating online completion of Know Your Customer (KYC) requirements. This has significantly reduced paperwork and processing time, streamlining the account opening process and making it faster and more convenient. This has helped to promote broader investment participation across the population.

Financial Inclusion - Financial inclusion has been a key priority for the Government of India. In August 2014, the government launched the National Mission for Financial Inclusion (NMFI), known as the Pradhan Mantri Jan Dhan Yojana (PMJDY), aimed at providing universal banking services to every unbanked household. This initiative is grounded in the principles of banking the unbanked, securing the unsecured, funding the unfunded, and serving unserved and underserved areas. To further enhance financial inclusion efforts in the country, the PMJDY was expanded beyond August 14, 2018, shifting its focus from opening accounts for "every household" to "every unbanked adult."

Additionally, as part of its financial inclusion initiatives, the government has been systematically offering training sessions and short-term courses to enhance investors' knowledge and empower them to invest in the capital markets effectively. These educational programs are designed to equip potential investors with the necessary skills and understanding to navigate the complexities of investing, thereby fostering greater participation in the financial ecosystem.

Taxation policy: The government has actively encouraged investment in mutual funds by offering tax deductions on certain schemes, notably Equity Linked Savings Schemes (ELSS). Investors seeking to reduce their tax liability may find ELSS particularly appealing, as they provide tax benefits under Section 80C of the Income Tax Act. This initiative not only incentivizes individuals to invest in mutual funds but also promotes broader financial inclusion by

enhancing awareness of investment options that contribute to long-term wealth accumulation while simultaneously providing tax relief.

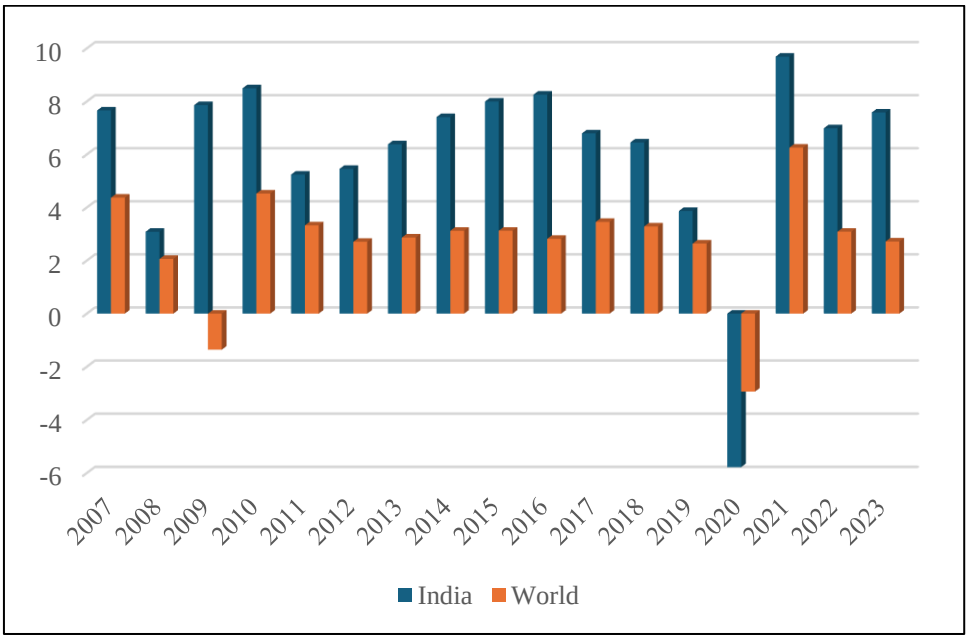
Economic Factors

The factors shaping the broader economic landscape and directly influencing potential returns, risk perceptions, and the appeal of mutual fund investments include levels of economic activity, income, unemployment rates, inflation and interest rates, household disposable income, savings rates, and market volatility and returns. Over the past decade and a half, India has demonstrated remarkably strong performance on these indicators, frequently surpassing the global average. Figures 6.3.3a – 6.3.3f illustrate this progress.

As discussed in Section 6.3.1 India's robust GDP per capita growth was driven by an annual GDP growth rate of 6.09 per cent, significantly higher than the global average of 2.7 per cent from 2007 to 2023 (World Development Indicators). However, this strong GDP growth did not yield a proportional reduction in unemployment, which averaged 7.5 per cent, remaining above the global average of 6 per cent over the same period. Notably, unemployment rates fell below the global average after the pandemic, as economic growth accelerated. Annual headline inflation, as measured by the consumer price index, followed a similar pattern, remaining above global levels for much of 2007 – 2023 before a marked decline starting in 2022. Gross National Income and Gross National Disposable Income saw steady growth throughout the period, leading to a consistent rise in gross savings. Although the year-on-year savings growth rate fluctuated, gross savings achieved a compound annual growth rate of 9.7 per cent from 2007 to 2023. An increase in disposable income and savings has a direct effect on individuals' risk appetite. As disposable income and hence savings grow, people seek to diversify their portfolios by investing in stocks, bonds, and other securities, aiming for higher returns on their surplus funds. This behaviour, in turn, drives up demand and market activity.

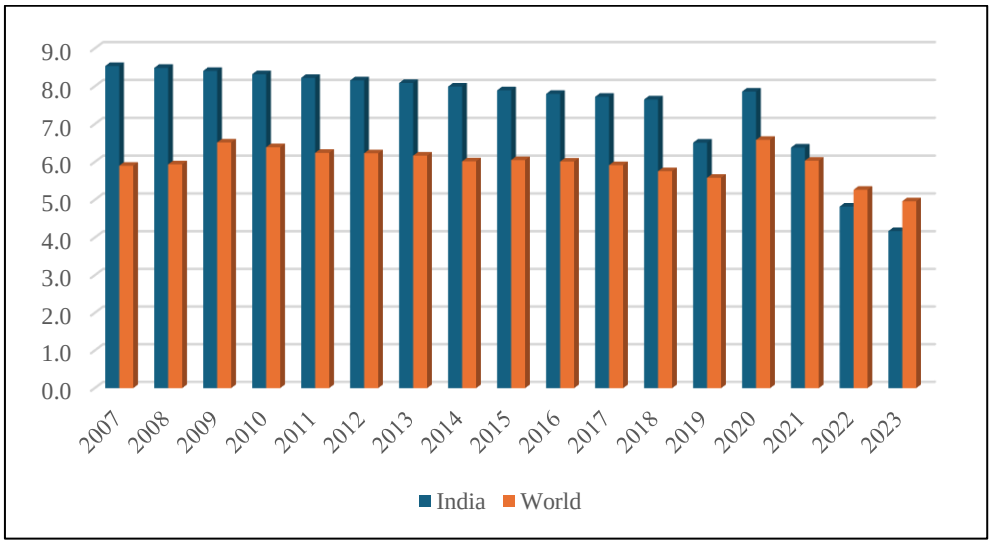
These strong fundamentals provided the macroeconomic backdrop necessary for increased domestic institutional investor (DII) participation. This growth has been further supported by consistent positive returns and relatively low volatility in equity markets, not only when compared to historical averages but also in relation to global volatility benchmarks like the CBOE VIX, as shown in Figures 6.3.3f and 6.3.3g.

Figure 6.3.3a: Annual GDP growth rate (%)



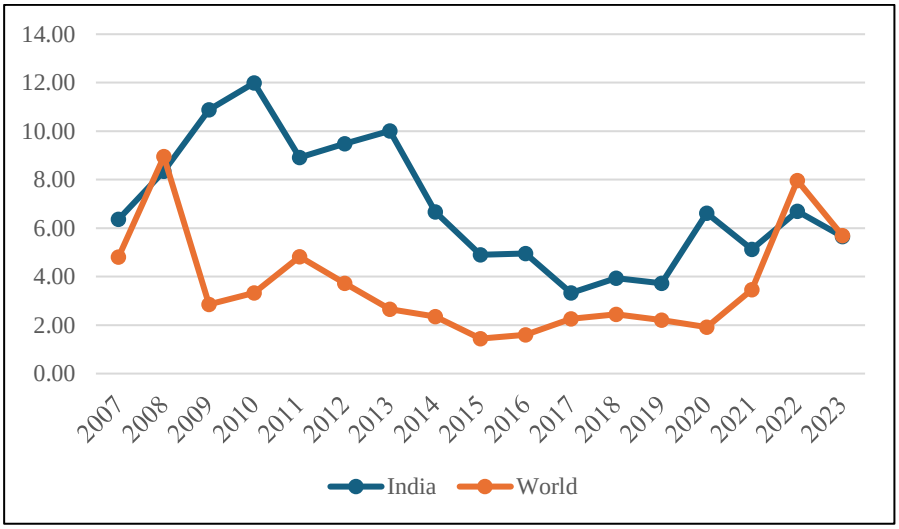
Source: Based on World Development Indicators

Figure 6.3.3b: Unemployment (%)

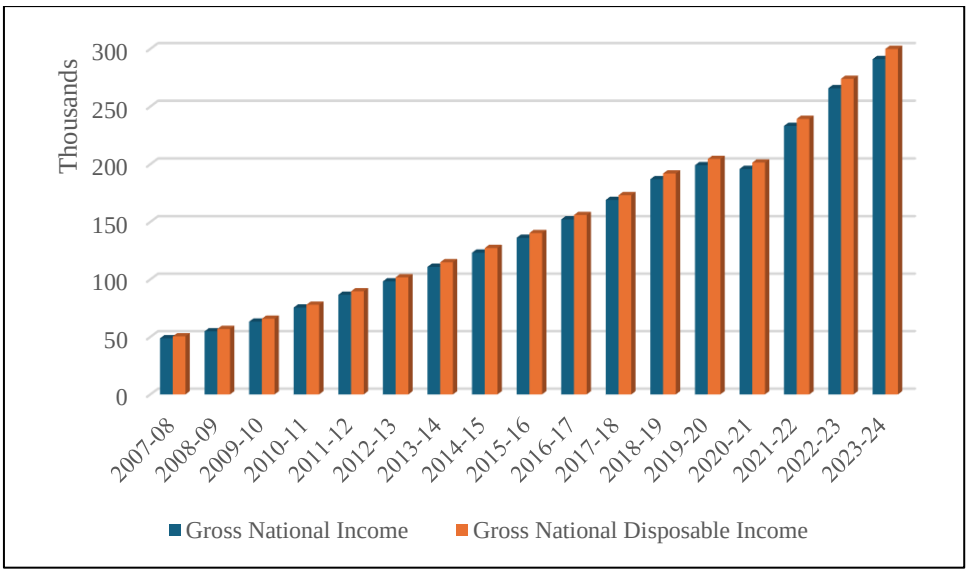


Source: Based on World Development Indicators

Figure 6.3.3 d: Gross National Income and Gross National Disposable Income (INR billions)

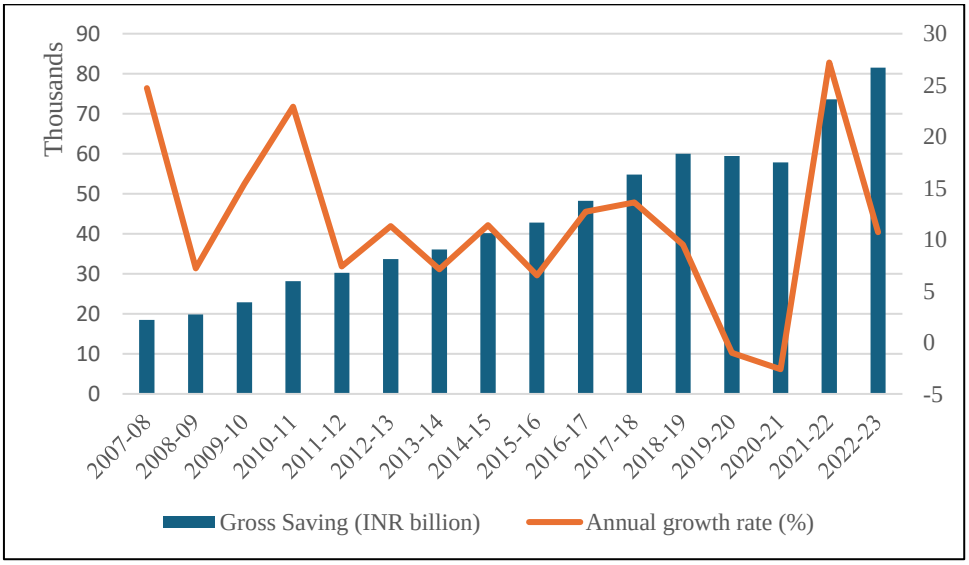


Source: Based on World Development Indicators



Source: Based on EPWRF India Time Series database[20]

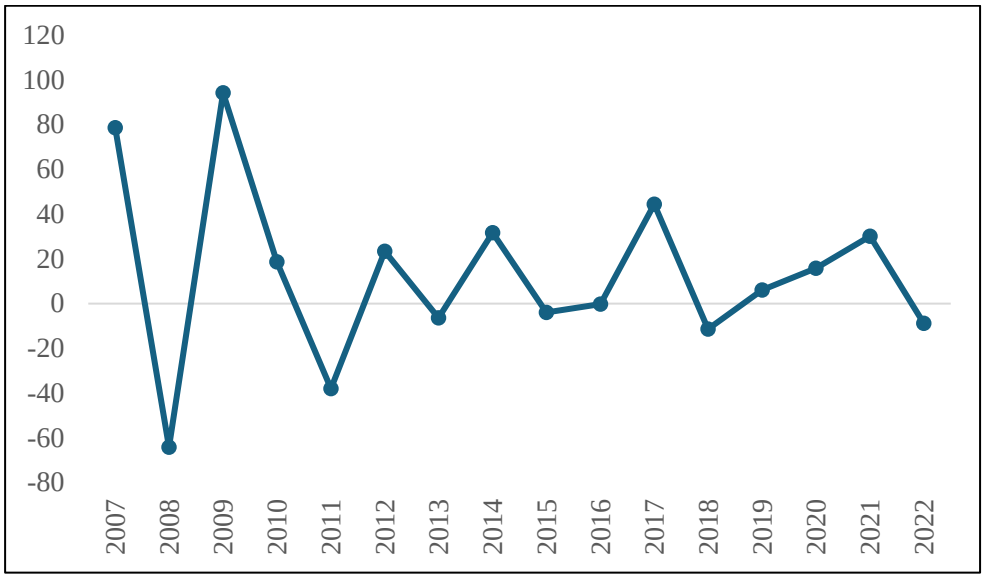
Figure 6.3.3e: Gross savings and annual growth in gross savings



Source: Based on World Development Indicators

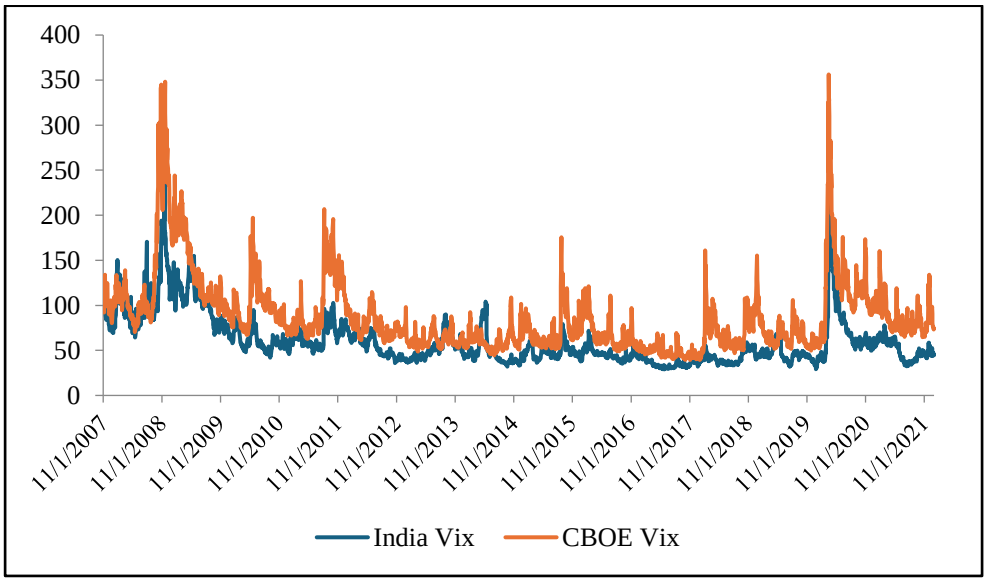
[20] https://epwrfits.in/

Figure 6.3.3f: Index Return (%)



Source: Based on World development Indicators

Figure 6.3.3g: Indian VIX compared to CBOE VIX



Source: Based on author's calculation based on data from Bloomberg

Social Factors

India's population is relatively young, with a median age of 29.8 years (CIA World Factbook)[21] and is expected to remain younger than many other nations for the foreseeable future. This demographic advantage points to an increasing share of India's working-age population, leading to a higher labour force participation rate. Consequently, per capita income is likely to grow significantly as more people enter the workforce. Combined with projected GDP growth, this demographic shift is expected to drive the rapid expansion of the middle class, resulting in higher disposable incomes among working-age individuals.

The segment of India's working-age population earning over USD 10,000 annually—referred to as "Affluent Indians"—grew at a compound annual growth rate (CAGR) of 12.6 per cent between 2019 and 2023, reaching 60 million by March 31, 2023 (Goldman Sachs, 2024). This growth far outpaces the overall working-age population CAGR of 1.4 per cent over the same period, underscoring a substantial rise in India's middle class.

This affluent class's growth aligns with increased consumption of various discretionary goods and services in India. For example, there are 40 million domestic air travellers annually, 26 million international travellers (Directorate General of Civil Aviation (DGCA))[22], 30 million broadband connections (Telecom Regulatory Authority of India (TRAI))[23], and 30 million monthly active users on online food platforms. If the affluent population's growth rate of 13 per cent continues, India's affluent class could reach 100 million by 2027.

[21] https://www.cia.gov/the-world-factbook

[22] https://www.dgca.gov.in

[23] https://www.trai.gov.in

The following data further underscores the growth of India's rising middle class over the past five years:

- The number of individuals filing income tax returns with declared incomes above Rs 1 million (USD 12,000) has grown at a compound annual growth rate (CAGR) of 19 per cent between 2017 and 2022, significantly outpacing the overall income tax filings, which grew at a compound annual growth rate of 8 per cent during the same period (Ministry of Finance, India)[24].
- Individual term deposits exceeding Rs 1.5 million (USD 18,500) have increased at a CAGR of 45 per cent from 2019 to 2023, while term deposits below Rs 1.5 million grew at a CAGR of only 3 per cent in this period (RBI)[25].
- Credit cards, typically used by higher-income consumers, have nearly doubled from under 50 million in 2019 to over 90 million in 2023 (RBI). Many individuals own multiple credit cards, suggesting that the majority of credit cards are likely held by "Affluent Indians," who currently number around 60 million.
- The number of postpaid mobile connections has almost doubled as well, from 54 million in 2020 to 92 million in 2023 (TRAI)[26].

The mutual fund participation in Indian equity markets has benefited from the growing share of young and working-age individuals, the expanding middle class, and consistently rising salary levels, which saw an annual average increase of 9 per cent from 2020 to 2023 and are projected to grow by 9.8 per cent in 2024 (Statista)[27]. Retail investment through Systematic Investment Plans (SIPs) has surged, quadrupling from INR 56 billion in 2017 to INR 146 billion

[24] https://finmin.gov.in

[25] https://www.rbi.org.in

[26] https://www.trai.gov.in

[27] https://www.statista.com/

in 2023 (AMFI)[28]. The number of demat accounts also nearly tripled, rising from 41 million in 2020 to 114 million in 2023 (SEBI)[29]. Additionally, household savings flowing into shares grew substantially from 2017 to 2023 and remain strong. Unique investors in Indian equity markets nearly tripled to 90 million since 2020, and mutual fund investors (unique PAN holders) more than doubled, from 21 million in December 2020 to 45 million in April 2024.

A 2023 Computer Age Management Services (CAMS)[30] report notes that India added 15.7 million new mutual fund investors between 2019 and 2023, with millennials (born between 1981 and 1996) making up 54 per cent of these investors. In 2023, nearly 90 per cent of their investments were in equity mutual funds. Additionally, 66 per cent of millennials (5.1 million) chose SIPs for their initial investments, indicating a focus on equity as a long-term asset class. With an estimated 20 to 30 years of earning and saving ahead, these investors often start with small amounts, with potential to increase their equity allocations as familiarity and confidence in this asset class grow.

This trend, showing a shift toward equity investments over traditional savings among the growing middle class and expanding young workforce, is likely further strengthened by rising investor confidence and increasing financial literacy among households. Investor trust is fundamental to stock market participation, with numerous studies underscoring how confidence in market fairness, regulatory effectiveness, and the reliability of financial information shapes investors' risk perceptions and willingness to invest. Trust is gradually cultivated through stronger regulations, enhanced governance, and the overall success of financial markets. Corporates, regulators, and intermediaries—such

[28] https://www.amfiindia.com

[29] https://www.sebi.gov.in/

[30] https://www.camsonline.com/Annual_Report/FY2023-2024/

as accountants, brokers, advisors, and institutional fund managers—are essential in fostering investor trust and ensuring market integrity. According to the CFA Institute's 2022 Trust Survey, India ranks highest in trust among 15 global markets. Approximately 83 per cent of retail investors in India reported trust in financial services, compared to 64 per cent in the U.S., 45 per cent in Australia, and 37 per cent in Germany (the lowest ranked). Trust levels among retail investors in India rose from 71 per cent in 2018 to 87 per cent in 2021, before a slight dip to 83 per cent in 2022 (CFA Institute Trust Survey, 2018).

Investments in mutual funds are closely tied to financial market volatility, highlighting the importance of understanding current economic and financial trends for making informed investment decisions. Hence individuals with higher financial literacy levels are more likely to invest in mutual funds, as they can better assess the associated risks (Dash and Ranjan, 2023). Empirical studies support this positive relation between financial literacy and mutual fund investments (Muller and Weber, 2010). Dash and Ranjan (2023) examined investment behaviours in India across different financial literacy levels. Table 6.3, reproduced from their study, shows that mutual funds and company shares are preferred investment assets among households. Approximately 68.4 per cent of investments are made through mutual funds, while company shares rank a distant second at 26.4 per cent. The proportion of mutual fund investments rises with financial literacy; for example, 28.7 per cent of individuals with elementary financial literacy invest in mutual funds, compared to 66.5 per cent at the moderate level and 75.5 per cent at the advanced level.

A Reserve Bank of India (RBI) survey in 2017 reported an average financial literacy score of 11.9 out of a possible 21 (Shankar, 2017). To improve the financial literacy rate, the RBI has launched various initiatives that include Basic Financial Education resources like a Financial Literacy Guide, Financial Diary, and a set of 16 educational posters, as well as targeted Sector-Focused Financial Education and Public Awareness Campaigns.

Technological Factors

Technology has emerged as a key catalyst for increasing capital market participation in India by enhancing accessibility through a variety of user-friendly trading platforms. The shift from traditional paper forms to digital formats and the transition from physical share certificates to demat accounts have streamlined transactions, making them faster and more efficient.

The rapid growth in mobile broadband subscriptions and internet usage has been accompanied by a significant reduction in data costs. Government initiatives such as Digital India, the National Digital Communications Policy 2018, the National Broadband Mission 2019, BharatNet[31], Common Service Centres (CSCs), and the Universal Service Obligation Fund (USOF) have been instrumental in expanding connectivity and fostering digital inclusion throughout the country.

This ongoing digital transformation is expected to further enhance market participation. Recently, user-friendly trading applications have gained considerable traction as people's comfort with technology has increased, allowing investors to execute trades directly from their mobile devices. A substantial proportion of these retail investors consists of younger, working-age individuals who are keen to maximize their investment returns. With their tech-savvy nature, these individuals have rapidly adopted mobile apps and payment platforms that provide direct access to capital markets. This accessibility empowers them to explore and capitalize on investment opportunities beyond conventional options, driving a new wave of engagement and investment in the stock market.

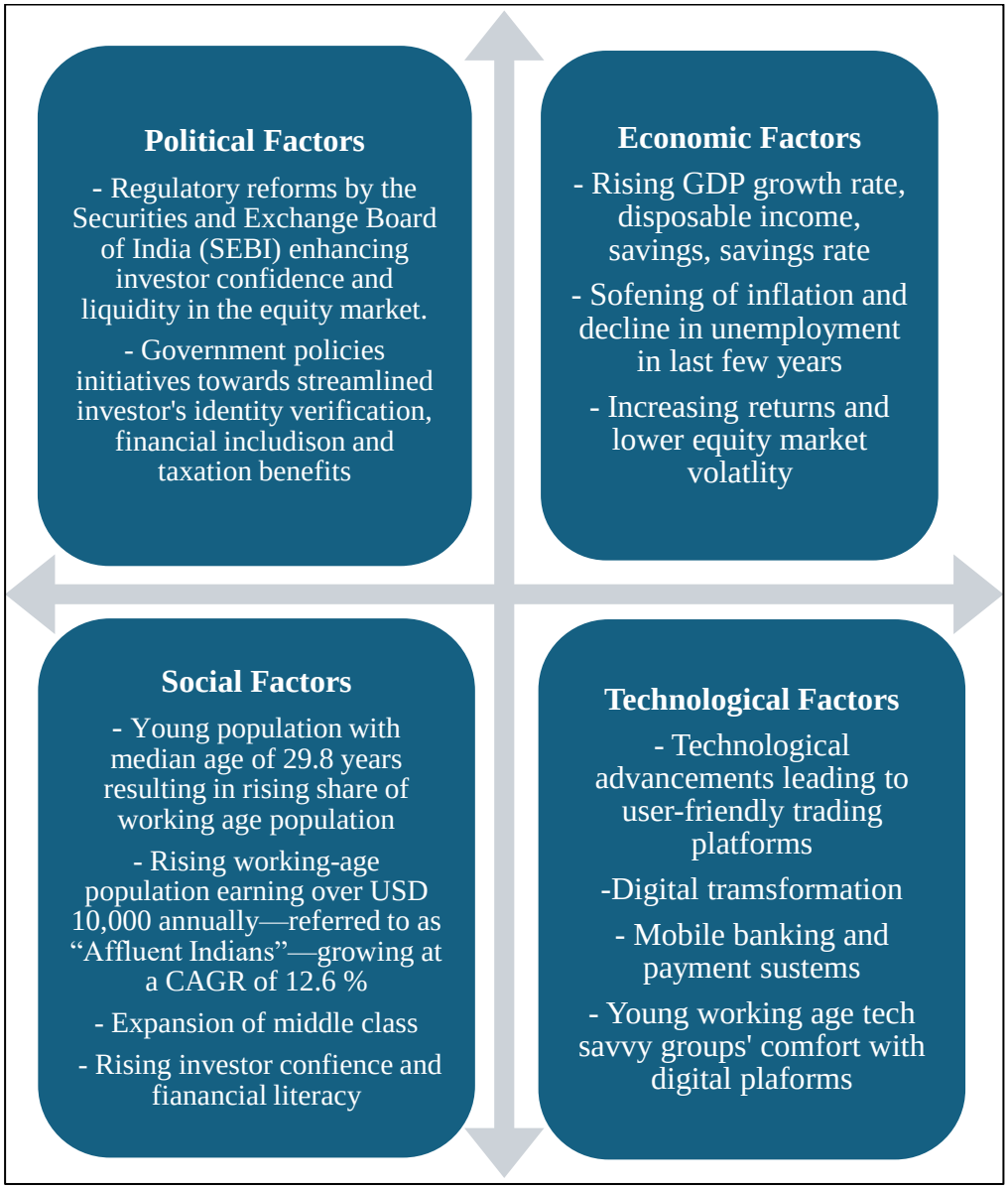
To summarize, the PEST analysis of the mutual fund industry in India presented in this section reveals several positive indicators likely to contribute to a

[31] https://usof.gov.in/en/bharatnet-project

favourable investment environment, thereby promoting rising participation and future potential for mutual funds and domestic institutional investors (DIIs) in the country.

Economic factors highlight robust GDP growth and increasing disposable incomes, providing a solid foundation for investment in mutual funds. Socially, there is a growing trend toward a rising middle class with increased demand for discretionary services. This is further supported by a shift toward financial literacy and equity investments, particularly among the young and tech-savvy population, which enhances market participation. Politically, government initiatives aimed at financial inclusion, coupled with supportive regulations from the Securities and Exchange Board of India (SEBI), foster transparency and investor confidence. Technologically, the rapid digital transformation has led to the proliferation of accessible trading platforms, facilitating seamless investment experiences. While some challenges related to unemployment and inflation persist, the overall landscape for the mutual fund industry remains promising, driven by these conducive economic, social, political, and technological factors.

Figure 6.3.3.h: PEST Analysis of Mutual Fund Industry in India


Political Factors
- Regulatory reforms by the Securities and Exchange Board of India (SEBI) enhancing investor confidence and liquidity in the equity market.
- Government policies initiatives towards streamlined investor's identity verification, financial includison and taxation benefits
Economic Factors
- Rising GDP growth rate, disposable income, savings, savings rate
- Sofening of inflation and decline in unemployment in last few years
- Increasing returns and lower equity market volatlity
Social Factors
- Young population with median age of 29.8 years resulting in rising share of working age population
- Rising working-age population earning over USD 10,000 annually—referred to as "Affluent Indians"—growing at a CAGR of 12.6 %
- Expansion of middle class
- Rising investor confience and fianancial literacy
Technological Factors
- Technological advancements leading to user-friendly trading platforms
-Digital tramsformation
- Mobile banking and payment sustems
- Young working age tech savvy groups' comfort with digital plaforms

Source: Based on Author's analysis

7. Conclusion and Policy recommendations

The Indian equity market has traditionally been dominated by foreign institutional investors (FII), whose investments are often volatile, reacting strongly to unfavourable domestic and global events. This volatility has historically caused destabilizing effects due to fluctuating FII net flows. However, over the past decade, there has been a significant rise in the participation of domestic institutional investors (DII), with a particularly sharp increase since 2015. In contrast, net FII equity flows declined notably in 2021, remaining subdued due to factors such as the U.S. Federal Reserve's withdrawal of quantitative easing and slowing economic growth in India. This period also saw the onset of the global pandemic, which led to a sharp economic downturn in India. Despite these challenges, the Indian equity market surged, outperforming other emerging markets by 56 per cent.

The increase in DII participation is largely driven by a rise in retail investment, with mutual funds, which account for over 60 per cent of DII flows, experiencing substantial growth during this period. The expanding role of DIIs has spurred debates on whether they can provide stability during times of significant FII outflows. However, DII participation in India remains low compared to global standards, despite its impressive growth.

Against this backdrop, this thesis examines the dynamic relationship between DII investment flows and stock market returns and volatility, considering FIIs' historical dominance in the Indian markets. It assesses DII's future growth potential and proposes relevant policy directions, addressing the critical question of whether DIIs can set the market tone and maintain stability even amid FII withdrawals. Drawing on theoretical frameworks that explore the relationship between investment flows, returns, and volatility, the thesis investigates whether DII flows can influence returns and reduce volatility, offering stability to the Indian equity market even as FIIs exit.

The analysis follows a three-step approach. First, it explores the dynamic relationship between DII flows and stock market returns, as well as DII flows and stock market volatility, over the period from 2007 to 2021. This relationship is further analysed by disaggregating DII flows into mutual funds and other DIIs, including insurance companies, local pension funds, and banking and financial institutions. The analysis also assesses how key events, such as the Global Financial Crisis, demonetization, and the introduction of the Goods and Services Tax, have influenced the flow-return and flow-volatility relationships.

Second, the study identifies the drivers of mutual fund growth from the demand, supply, and regulatory perspectives using a panel analysis across multiple countries. It then evaluates India's performance on these identified factors, comparing the growth and performance of its mutual fund industry to that of similar emerging economies.

Finally, a broad factor analysis is conducted to assess the external environment supporting industry growth. Political, economic, social, and technological factors that may drive future expansion of the mutual fund industry and hence DII participation are identified. Based on these findings, the study offers policy recommendations and highlights areas for future research.

Summary of findings objectives:

(i) *DII-Return dynamic interactions:* The study finds that domestic institutional investor (DII) inflows, outflows, and net inflows are significantly influenced by market returns from the previous five days. Specifically, higher market returns lead to a decrease in inflows and an increase in outflows, indicating a negative feedback trading pattern where investors tend to sell during rising markets and buy during declines. In contrast, DII flows have minimal impact on market returns. Mutual fund flows are notably affected by returns, as higher returns result in decreased purchases and increased sales. However, there is no clear causality observed from net mutual fund flows to returns. For other

DII flows, causality primarily flows from returns to outflows, while inflows show only weak causality toward returns. Overall, the relationship between DII flows and returns reflects a negative feedback trading pattern among domestic institutional investors.

(ii) *DII-Volatility dynamic interactions:* the results indicate unidirectional causality from net DII flows to market volatility, where net inflows lead volatility by one period. Individually inflows and outflows share a bidirectional causality with returns where inflows and outflows contribute to heightened volatility, while volatility negatively impacts inflows and positively affects outflows. Additionally, there is a bidirectional relationship between mutual fund flows and stock market volatility, with increased net mutual fund flows from previous periods leading to higher volatility. Past volatility also influences net flows after a five-period lag, with inflows leading volatility by two periods and outflows by one. This DII flow volatility relationship reinforces the notion that domestic institutional investors engage in negative feedback trading, where their investment behaviours are reactive to market conditions rather than predictive. Overall, the findings underscore the tendency of domestic institutional investors to respond to market fluctuations, contributing to a stabilizing effect in the market while simultaneously limiting the impact of DII flows on returns.

(iii) *Differential impact of economic and policy shocks on dynamic interrelationship between DII flows and returns & DII & Volatility* The analysis further reveals that the negative sentiment following the Global Financial Crisis (GFC) and the policy shock from the implementation of the Goods and Services Tax (GST) weakened the relationship between returns and flows. The GFC had a more pronounced impact, diminishing the flow-return link, while the GST had a limited effect. Conversely, demonetization strengthened the return-flow relationship through the other DII channel, increasing the impact of returns on net DII inflows.

In terms of the flow-volatility relationship, the GFC notably heightened the influence of DII flows on volatility, with an increased sensitivity of volatility to both mutual fund inflows and outflows, as well as those of other DIIs. However, the GFC did not change the overall effect of total DII net flows on volatility. Neither demonetization nor GST had a significant impact on how flows affected volatility.

(iv) *Dynamic interrelationship between DII flows and returns and DII flows and volatility during 2007-2014 and 2015-2021:* The findings indicate that the interrelations between net flows and volatility are largely consistent across both periods, characterized by bidirectional causality and a notable impact of net flows on volatility in each timeframe. The primary distinction lies in the differing lags and leads that affect how flows and volatility influence one another during these periods. However, there has been a significant shift in the interaction between net flows and returns since 2015. Before this period, causality ran unidirectionally from returns to DII net flows; now, this relationship has evolved into bidirectional causality. Consequently, DII net flows, which previously had no effect on returns, now exert a substantial positive impact on return flows with a five-day lag. Additionally, other DII flows, which have actively responded to returns, have increased their participation and strength in recent years, likely contributing to this new bidirectional relationship. Despite this change, the impact of returns on net flows remains consistent with the 2007-2014 period, as domestic institutional investors continue to exhibit negative feedback trading behaviour.

(v) *Factors for growth of Mutual Funds globally:* The findings pertaining to the analysis identifying the drivers of global mutual fund industry growth through panel data across countries reveals several key insights. Firstly, demand-side factors—such as income, wealth, real interest rates, and investor awareness—significantly influence the growth of the

mutual fund industry across various nations. Secondly, on the supply side, while index returns have emerged as a global driver of fund investments, the primary facilitators of mutual fund industry growth are the depth and efficiency of financial institutions and markets. Importantly, legal and regulatory factors have not played a significant role in this growth. The findings also highlight that the factors influencing mutual fund growth differ based on a country's development status. In advanced economies, demand- and supply-side factors contribute equally to the industry's expansion, with GDP per capita, real interest rates, financial institution depth, and market efficiency identified as crucial determinants. Conversely, in developing nations, supply-side factors—particularly the depth and efficiency of financial markets—are more influential, while income and wealth emerge as the sole demand-side drivers supporting mutual fund growth. Overall, the growth of the global mutual fund industry is shaped by a complex interplay of demand and supply-side factors. Key drivers include consumers' purchasing power, elevated bank lending rates, enhanced efficiency of financial institutions, and the presence of larger, more liquid financial markets. However, the impact of these factors varies significantly when countries are classified into advanced and developing categories.

(vi) *Potential for growth of Mutual Funds and hence DII participation in India:* The analysis of the growth potential of the mutual fund industry, and consequently DII participation in India—grounded in panel data analysis, PEST analysis, and a comparative review with Brazil and China—uncovers several critical insights. The current momentum in GDP growth and promising future prospects, combined with the efficiency of financial institutions and markets, serve as positive indicators for the industry’s expansion. However, challenges persist

regarding the size and liquidity of financial markets, which necessitate targeted policy interventions.

The PEST analysis reinforces these conclusions by highlighting robust economic growth and increasing disposable incomes that enhance the investment landscape. Additionally, a social trend toward greater financial literacy, particularly among younger demographics, is fostering increased market participation. Politically, the Indian government's commitment to financial inclusion and the supportive regulatory framework established by the Securities and Exchange Board of India (SEBI) further contribute to a favourable investment climate. Technological advancements have also improved accessibility to investment through digital platforms, facilitating seamless transactions.

The review of the experiences of Brazil and China reveals similar growth drivers for the mutual fund industry, including the importance of building investor confidence, maintaining robust regulatory foundations, and addressing the needs of an affluent middle class. The experiences of these countries demonstrate that balanced taxation policies and a mature fund market are crucial for sustaining growth.

The findings from all three analyses indicate that India's mutual fund industry exhibits significant growth potential. Moreover, there is considerable room for expansion, as the Assets Under Management (AUM) to GDP ratio is at 16 percent, substantially lower than the global average of 60 percent. Overall investments in mutual funds and equities remain low as a proportion of total financial assets, suggesting ample opportunity for future growth.

7.3 Policy recommendations based upon findings of the research

The performance of the Indian stock market has historically been significantly influenced by Foreign Institutional Investor (FII) net flows, with net outflows

leading to decreased returns and increased volatility. This study confirms these trends while highlighting the growing importance of Domestic Institutional Investor (DII) flows in stabilizing the market. The past dominance of FIIs has often made the market vulnerable to destabilizing effects, so the recent rise in DII participation is encouraging. Policymakers should support this shift to enhance market stability. Additionally, the study identifies key drivers for the mutual fund industry in India. Given that mutual funds constitute over 60 percent of DII activity, government support for this sector could further stimulate growth and help maintain market stability amid FII outflows.

Based on the findings of the study, the following policy recommendations are proposed to facilitate the growth of DII participation through enhanced mutual fund flows:

A. Policy recommendations to improve demand side factors

The demand-side factors favouring the growth and participation of mutual funds—and thus DIIs—include rising income, wealth, savings, real interest rates, and investor awareness and education. Current trends, such as the increasing in GDP per capita and disposable income, alongside higher savings rates within the middle class and young workforce, provide a strong foundation for mutual fund growth. However, the government should place greater emphasis on policies that enhance financial education, promote digital literacy, and encourage technology-oriented solutions for investors.

Persistent issues like unemployment and inflation require targeted policy interventions. High real interest rates can deter investment in equity mutual funds, as they make debt funds more appealing due to higher yields. Policymakers should aim to ensure that inflation is accurately measured and that nominal interest rates are kept close to inflation rates. Lower real interest rates would create a more favourable environment for the growth of equity mutual funds by reducing the comparative advantage of debt-oriented investments.

Thus, the suggested policy interventions are:

1. *Enhance Financial Education Programs***:** Deepen existing educational campaigns aimed at improving financial literacy across demographics, with a particular focus on younger and middle-class segments.

2. *Promote Digital Accessibility***:** Encourage the use of technology in investing through incentives for digital financial platforms, making mutual fund investments more accessible and appealing.

3. *Maintain Real Interest Rate Alignment***:** Monetary policymakers should make timely and appropriate interventions to align nominal rates with inflation, thereby promoting a lower real interest rate environment that supports equity investments.

4. *Address macroeconomic concerns:* The creation of adequate job opportunities, along with benign inflationary trends, would stabilize disposable income levels, thereby fostering greater investment potential among individuals. Therefore, proactive policies related to employment and inflation control are essential.

B. Policy recommendations to improve supply side factors

On the supply-side index returns have been a global driver of fund investment, but the primary factors facilitating the growth of the mutual fund industry worldwide are the depth and efficiency of financial institutions and financial markets. India's Financial Institutions Depth Index (FIDI) and Financial Market Depth Index (FMDI) are considerably lower than those of peer emerging economies like China and advanced countries such as the USA, although both indices have shown slight improvements in recent years. In contrast, India has demonstrated strong performance in the Financial Market and Institutions Efficiency Index. Therefore, while the current efficiency of institutions and markets should be maintained and further strengthened, it is essential to focus on enhancing the size and liquidity of India's financial performance through targeted policy measures.

Thus, policy interventions on the supply side should address the following:

1. *Lower volatility*: Higher market returns along with lower volatility are important supply side variable are likely to have large positive effect on growth of funds. Although index returns are beyond policy control, but volatility is and hence policies could be framed for promoting flows from DIIs which had an impact on lowering volatility.
2. *Strengthen Financial Market and Institution Efficiency* – To strengthen market efficiency, it is crucial to increase stock turnover. This can be achieved by encouraging the government to promote a reduction in promoter holdings in companies below controlling stakes, thereby improving corporate governance. In the U.S., FME is considered optimal (the index of FME equals 1), as a significant proportion of companies are institutionally owned, leading to lower promoter holdings. Reducing promoter stakes in India would improve the free float of companies, fostering greater transparency and enhancing corporate governance. Financial Institution efficiency can be strengthened by diligently sanctioning of credit to private/public sector in terms of keeping return ratios, net interest margin in line/higher with industry standards. Due diligence is also required for keeping non-performing assets lower which can be a big drag on profitability of financial institutions.
3. *Improve Financial Market and Institution depth*: To improve Financial Market Depth (FMD), more companies should be encouraged to list on exchanges, which would reduce the share of unlisted firms. Easing listing norms can facilitate this process. With an increasing number of companies listed on exchanges, corporate governance is likely to improve. Our policies should be designed to gradually reduce promoter shareholding, thereby increasing the supply of shares and resulting in higher market liquidity and greater efficiency in equity markets. Financial Institution depth can be strengthened by enhancing financial inclusion in terms of increased

formalization of credit, formalization of savings in pension and mutual fund assets along with higher insurance penetration.

B. Policy recommendations to strengthen regulatory factors

The regulatory factors poised to drive the growth of domestic institutional investors (DIIs), especially through increased retail participation, include effective regulatory frameworks that build investor confidence, comprehensive investor education, and favourable taxation policies by the government. The Indian government's commitment to financial inclusion, coupled with the robust regulatory framework established by the Securities and Exchange Board of India (SEBI), fosters a positive investment environment. Furthermore, technological advancements have enhanced accessibility to investments via digital platforms, facilitating seamless transactions.

Thus, policy interventions on the regulatory front should focus on:

1. *Strengthen the focus on investor education and building investor trust*: Continue and strengthen the current emphasis on enhancing market participation through initiatives that promote and sustain investor confidence and education. Policies aimed at improving investor protection can further stimulate industry growth by boosting investor confidence. To combat fraud and corruption while safeguarding investors, the government could establish a legal audit team that operates independently of regular auditors, tasked with identifying discrepancies in financial statements well in advance. This would ensure that investors are fully informed. Assigning responsibility to a regulatory body is a crucial step in maintaining checks and balances against fraud in financial statements.
2. *Tax incentives to middle and upper-middle-class workforce:* The upper middle class should be incentivized to invest in mutual funds. Tax incentives could play a crucial role in encouraging their participation. Allowing mutual fund investments to qualify for deductions from taxable income would

motivate individuals to allocate a larger portion of their earnings to these funds, potentially transforming the industry's growth trajectory. This policy shift could be a game changer, fostering broader investment and accelerating the development of the mutual fund sector.

8. References

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